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PERSPECTIVE
MADE EASY:
OR, A
NEW METHOD
FOR
PRACTICAL PERSPECTIVE.

SHEWING

The Uſe of a New-Invented SENOGRAPHICAL PROTRACTOR; ſo eaſy, that a Perſon, tho' an intire Stranger to PERSPECTIVE, may, by Reading a few Lines, become Maſter of the Inſtrument, without the help of a Maſter.

It's Uſeful in taking the PERSPECTIVE DRAUGHTS of Towns, Countrys, Houſes, and Gardens, or any Objects whatever; much eaſier than what has hitherto been Practiſed. With ſeveral uſeful Examples in PRACTICAL PERSPECTIVE.

TOGETHER
With the DRAUGHTS of ſeveral remarkable Places, in and about the Cities of *Briſtol* and *Bath*;
In twenty-ſix COPPER PLATES.

By *WILLIAM HALFPENNY*.

LONDON:
Printed for JOHN OSWALD, at the *Roſe* and *Crown*, in *Little-Britain*. MDCCXXXI.

BRITISH MUSEUM
25 JUN 54

THE

PREFACE.

READER,

A*Lthough the World is crowded with Volumes of this Kind, I know of none that has publiſh'd a Practical Inſtrument ſo uſeful in* Perſpective, *as this* Senographical Protractor; *which was the only Inducement I had to write on this Subject. And to make the Work more uſeful to young Artiſts, I have laid down ſeveral Examples of* Lineal Perſpective, *in an Eaſy and Practicable Method: Alſo a View of the* Hot-Wells *at* Briſtol, *which I drew by the Help of this Inſtrument. So I ſhall conclude with its Explanation.*

PLATE I.

FIG. I. ABCD is the Plan of the Table, in which is made the Groove E, wherein the Sight-Staff ſlides to and fro, as occaſion requires. F, G, are the Plans of two Perpendicular Pieces framed on the Table; H I K L is a ſquare Board hung with Hinges to a piece of Wood, equal to its Thickneſs, fixed on the Table between F and G. M N O P, is the Perſpective-Plan of A B C D = X of E, = Q R, of F G, and S T V W, of H I K L; Y and Z are the Points of Sight, and Diſtance, drawn by the ſeveral following Examples.

FIG. II. A B C D is the Table-Board fixed on the three Legs E F G, = H I K L is a ſquare Frame fixed perpendicular on the Table, in which is made a Rabbet to receive the ſquare Board *b c ſ* T, which is hung on Hinges at *b c*; the Arches Q S, and R T, ſhow the Riſing and Falling of the Board *c b ſ t*, and D O M N is a Line of fine Cat-Gut, let through the Hole M, and faſten'd round the Nail O, and has a Leaden-Plummet at the end N, and a ſmall Bead on it, as at P, = W is a Slider fitted in the Groove V, in which is framed the Sight-Staff X, wherein are two Sights Y and Z.

The

Plate 1.

A ſenographecal protractor.

Fig. 1.

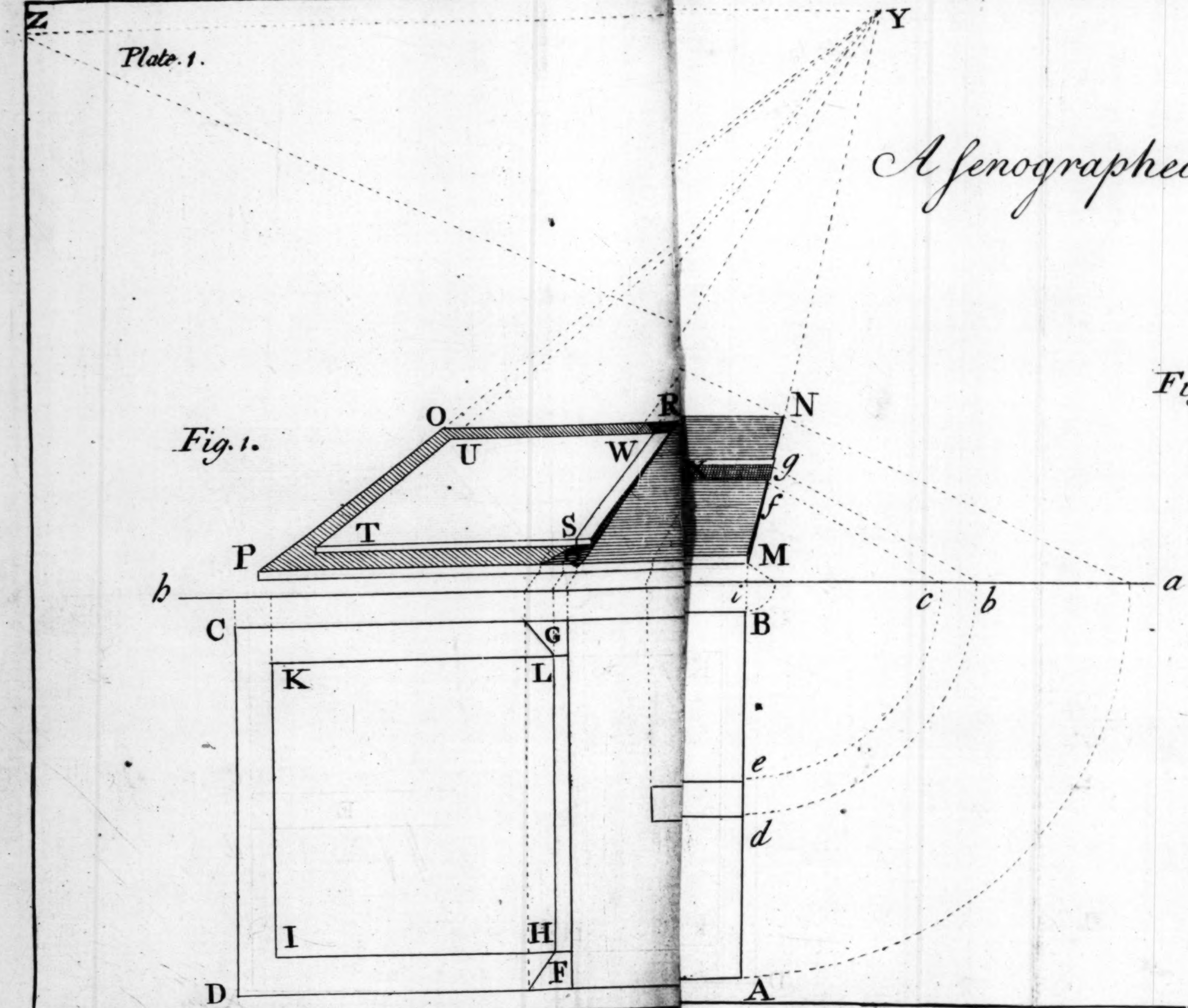
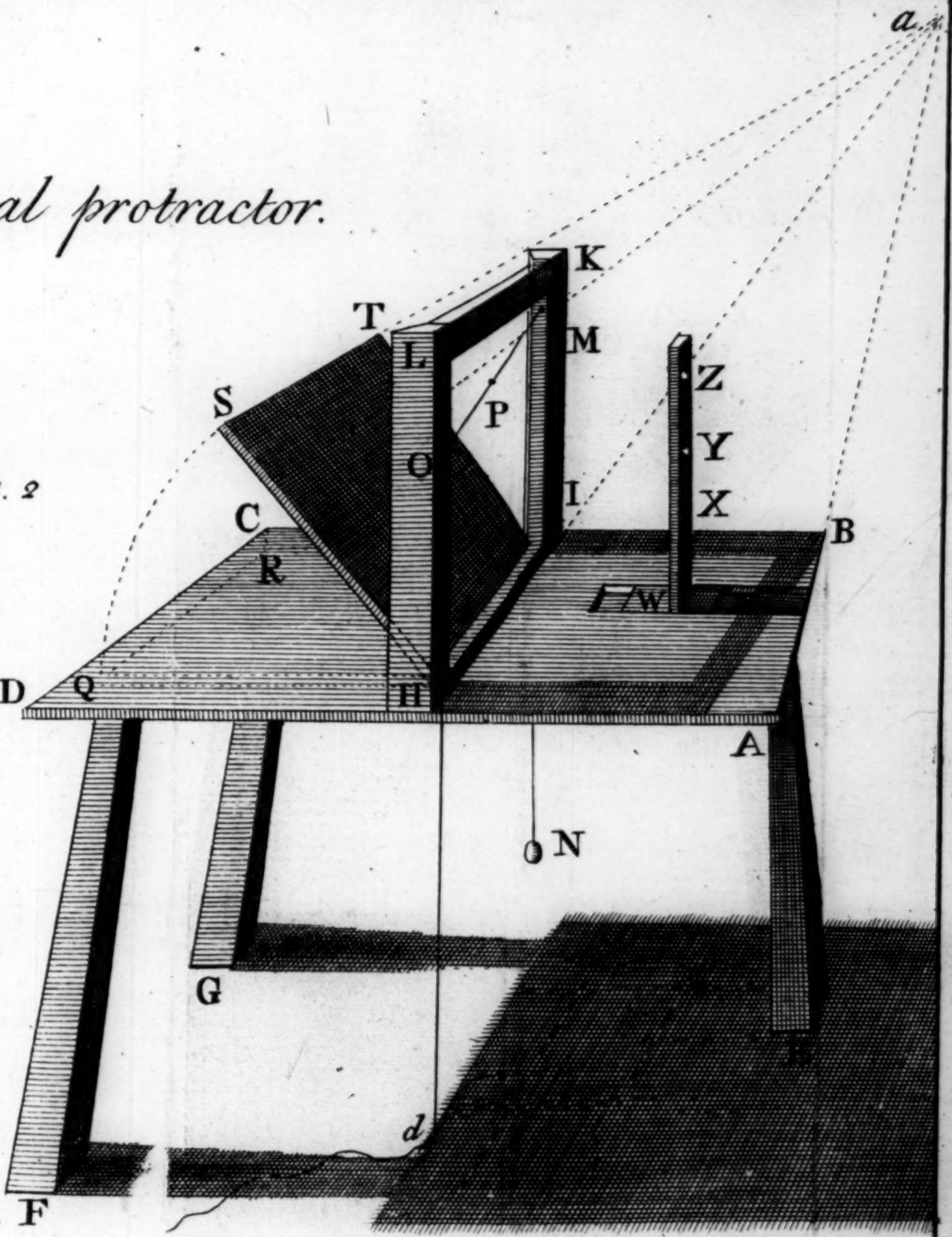


Fig. 2



Will. Halfpenny Invent & deline

The Uſe of this Inſtrument.

FIX the Inſtrument in the place you intend to take a Sight of the Object, and ſeal the Paper on which you intend to make the Draught on the Board *c b ſ* T; then fix the Sight-Staff X, nearer or farther according to the Scale you intend to make the Draught; and always obſerve, that the nearer the Sight-Staff is to the Frame HIKL, the leſſer the Scale is; and, conſequently, the farther off the larger. Draw out the Nail O, and take that Part of the Line in your Hand; then look through one of the Sights, Y, or Z, (keeping the Hand you have the Line in, cloſe to the Frame) and direct the Bead P in a right Line from your Eye to the Object; then, by the help of a Boy, or a Line and Pulley, with your Foot, turn up the Board *ſ*T, cloſe to the Frame LK; then will the Paper touch the Bead P, at which make a Point; then let down the Board *ſ*T, and in the ſame manner as before, direct the Bead P, in a right Line with the Eye and the ſecond Object. Then turn up the Board again, and at the Bead P, make the ſecond Point; and ſo on to every part of the Object.

N. B. *Since Drawing depends much on good Inſtruments, and particularly on that deſcribed in this Tract, as well as all Mathematical Inſtruments; I think I do the World ſervice in recommending Mr.* Thomas Heath, *Mathematical-Inſtrument Maker, at the* Hercules *and* Globe, *next Door to the* Fountain-Tavern, *in the* Strand; *whoſe Character is well known to the Practitioners of the Mathematical Art.*

PER-

Plate 2

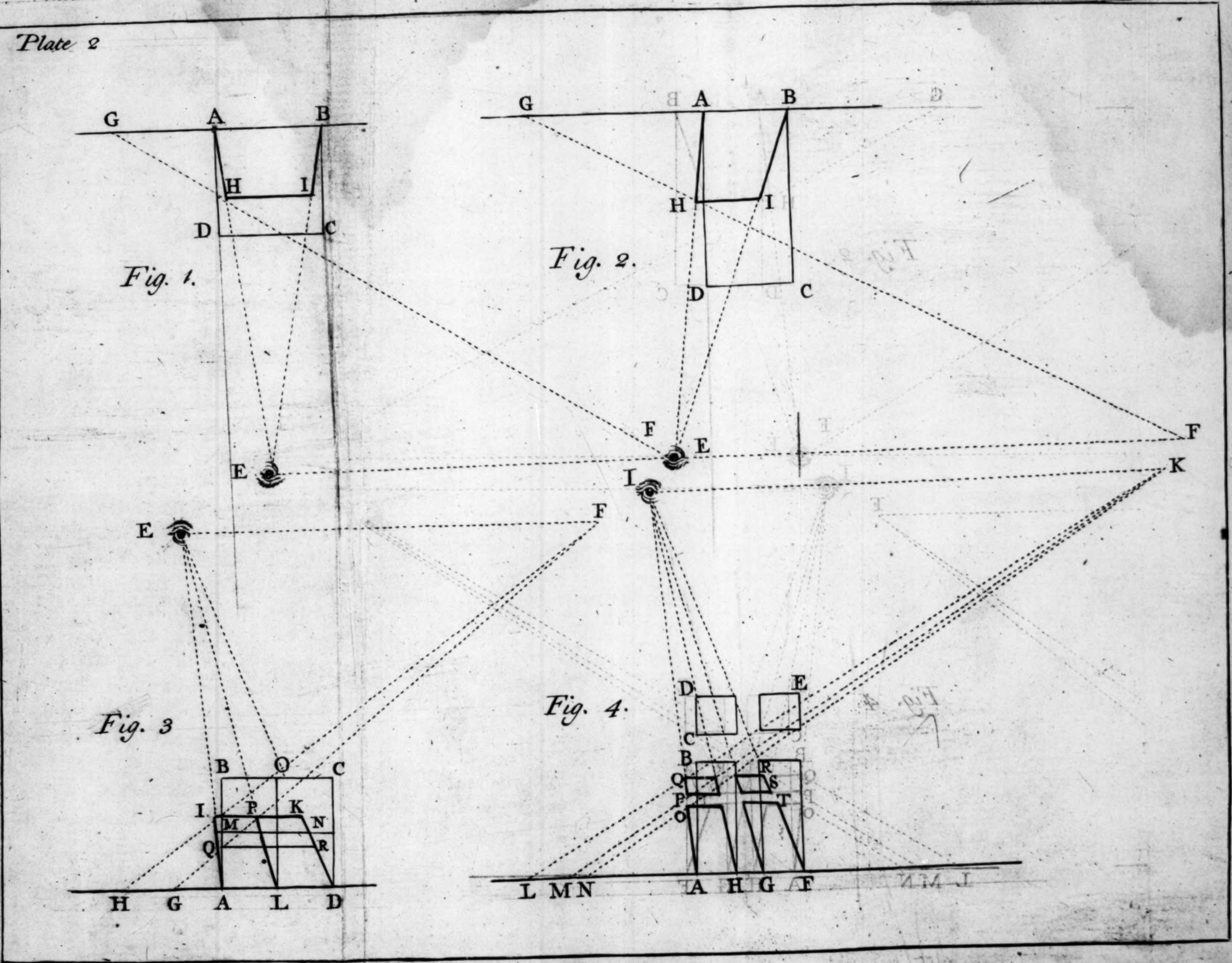


Fig. 1.
G A B H I D C E
Fig. 2.
G A B H I D C F E I K
Fig. 3
E F B O C I P K M N Q R H G A L D
Fig. 4.
D E C B R Q S P T O L M N A H G F

PERSPECTIVE MADE EASY.

PLATE II.

To find the Perſpective Plan of a Square or Cube fixt above the Eye, whoſe Point of Sight is in a Right Line, with the Middle of the Object.

FIG. I. Draw the Geometrical Plan A B C D, and continue the Line B A, at pleaſure towards G, fix the Point of Sight E ſo far below the Object as you intend to ſtand to view it; alſo fix the Point of Diſtance F, Horizontal with the Point of Sight E, and as far diſtant from each other as the Point of Sight E, is from a Perpendicular Line, dropt from the Object; take A D, and ſet it to G, draw the Occult Lines E A = E B, alſo the Line of Diſtance F G, and where it cuts the Line E A, as at H, draw the Line H I parallel to A B, then the Figure A H I B, is the Perſpective Plan required.

To find the Perſpective Plan of an Oblong Square or Cube fixt above the Eye, whoſe Point of Sight is Oblique, or out of a Right Line, with the Middle of the Object.

FIG. II. Draw the Geometrical Plan A B C D, continue the Line B A, at pleaſure towards G, fix the Point of Sight E, alſo the Point of Diſtance F; take A D, and ſet it from A, to G, and draw the Occult Lines E A, = EB, alſo the Line of Diſtance F G, and where it cuts the Line A E, as at H, draw the Line H I parallel to A B, then the Figure A B I H, is the Perſpective Plan required.

To find the Perſpective Plan of a Square Figure, divided into four leſſer Squares, fixt below the Eye, whoſe Point of Diſtance is Oblique to the Object.

FIG. III. Draw the Geometrical Plan A B C D, which divide by the Lines L O, = M N, fix the Point of Sight E, and Point of Diſtance F, Horizontal to each other, and ſo far above the Object as you ſtand to take the View; draw the Occult Lines E A = E L, and E D; then take A M, and ſet it from A, to G, alſo A B, and ſet it from A to H: draw the Lines of Diſtance F G = F H, and where they cut the Line E A, as at I, and Q, draw the Lines I K, and Q R, parallel to A D; then the Figure A Q I P K R D L, is the Perſpective Plan required.

Pla. 3

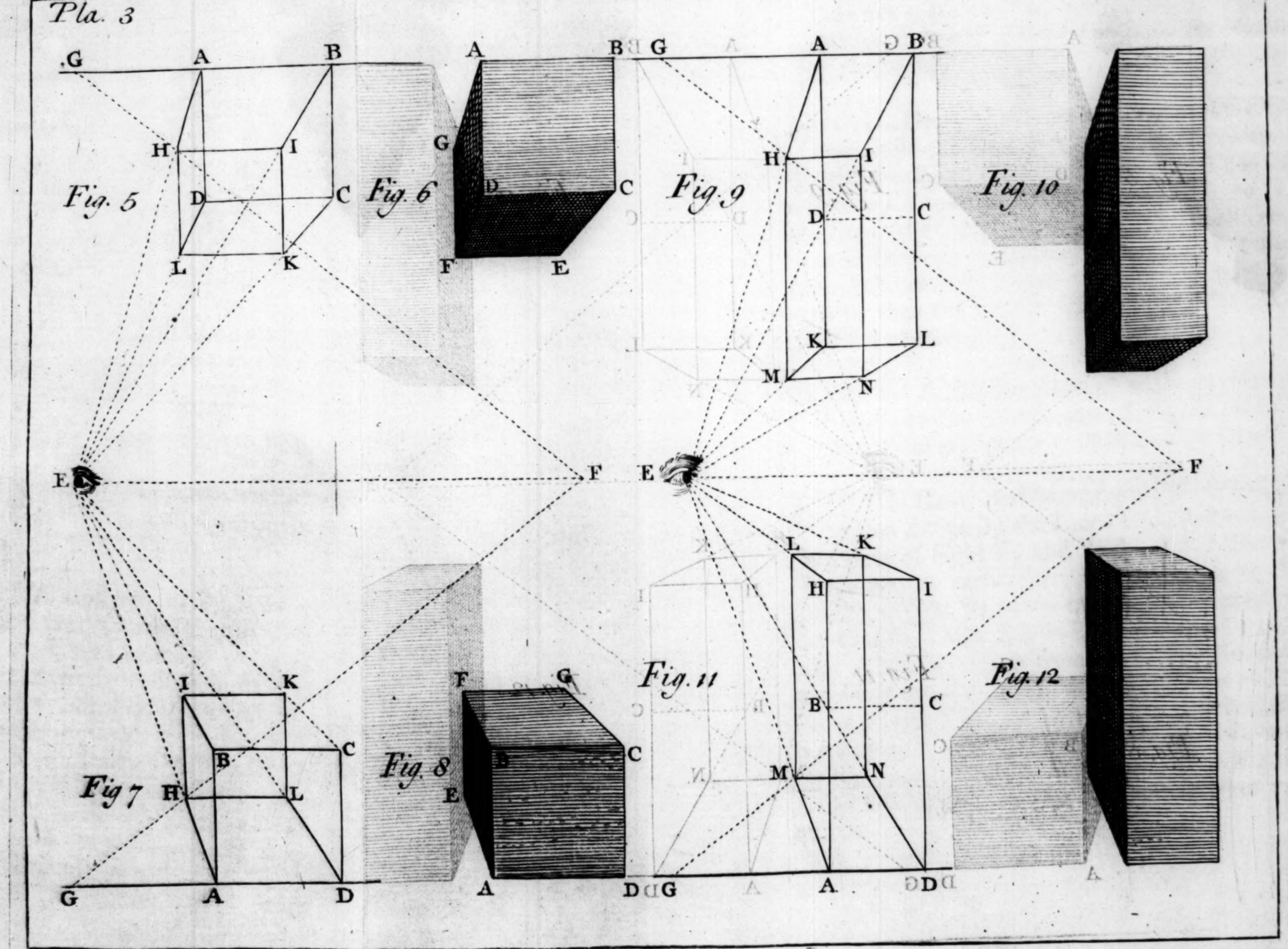


Fig. 5
G
A
B
H
I
D
C
L
K
Fig. 6
A
B
G
D
C
F
E
Fig. 9
G
A
B
H
I
D
C
K
L
M
N
Fig. 10
E
F
E
F
Fig 7
I
K
B
C
H
L
G
A
D
Fig. 8
F
G
B
C
E
A
D
Fig. 11
L
K
H
I
B
C
M
N
G
A
D
Fig. 12

To find the Perſpective Plan of a Croſs encompaſs'd, by two Squares and two Oblong Figures, whoſe Point of Sight is Oblique to the Object.

FIG. IV. Draw the Geometrical Plan A D E F, and fix the Point of Sight I, and Point of Diſtance K; take A B, and ſet it from A to N, alſo A C, to M, and A D to L, then draw the Occult Lines I A, = I H, = I G, and I F; alſo the Lines of Diſtance K L, = K M, and K N, and where they cut the Line I A, as at Q P O, draw the Lines Q R, = P S, and O T, parallel to F A, then the Figure A O P Q R S T F G H, is the Perſpective Plan required.

PLATE III.

To find the Perſpective Elevation of a Die or Cube fixt above the Eye, whoſe Point of Sight is Oblique to the Object.

FIG. V. Draw the Plan or Front A B C D, and fix the Point of Sight E, and Point of Diſtance F, draw the Occult Lines E A, and E B; then take A D, and ſet it from A, to G, draw the Line of Diſtance F G, and where it cuts the Line E A, as at H, draw the Line H I parallel to A B, draw the Occult Lines E D, = E C; then let fall a Perpendicular from H, to cut the Line E D, as at L, alſo from I, to cut the Line E C, as at K, and draw the Line K L; then A B C D H I K L is the Perſpective Cube required.

FIG. VI. is a Die or Cube found by the ſame Lines as *Fig.* 5. and is here inſerted more plainly to diſcover what part of the Cube is in View, and accordingly you'll find ABCD= AHLD, and DLKC, *Fig.* 5. to be equal to ABCD=AGFD, and DFEC, *Fig. 6.* which is evident that the Lines IB=IH and IK in *Fig.* 5. is not in View.

To find the Perſpective Elevation of a Die or Cube fixt below the Eye, whoſe Point of Sight is Oblique to the Object.

FIG. VII. Draw the Front, or Plan ABCD, fix the Point of Sight E, and Point of Diſtance F, draw the Occult Lines AE, and DE, take AB, and ſet it from A, to G, and draw the Line of Diſtance GF; and where it cuts the Line AE as at H, draw the Line HL parallel to AD, then draw the occult Lines CE, and BE, from H; raiſe a Perpendicular to touch the Line EB as at I, alſo from L, raiſe a Perpendicular to touch the Line EC, as at K: draw the Line IK; then the Figure ABCDIKLH, is the Perſpective Cube required.

FIG. VIII. is drawn to ſhew what part of the Cube is in View, and the Letters mark'd thereon are as follow; ABCD=AEFB, and BFGC is equal with ABCDAHIB, and BIKC, *Fig.* 7. which proves the three Lines LD=LK, and LH, to be out of View; and ſo of the following Cubes.

To find the Perſpective Elevation of a Cubical Figure fixt above the Eye, whoſe Plan is an Oblong, and the Point of Sight Oblique to the Object.

FIG. IX. Draw the Geometrical Plan ABCD, fix the Point of Sight E, and Point of Diſtance F, take AD, and ſet it from A, to G, draw the Occult Lines EA, and EB, alſo the Line of Diſtance GF, and where it cuts the Line AE, as at H, draw the Line HI, parallel to AB; let fall the two Perpendicular Lines BL and AK to your intended Length, and draw the Line LK; then draw the occult Lines EL, and EK, from I, let fall a Perpendicular to touch the Line EL, as at N; alſo from H, let fall a Perpendicular to touch the Line EK as at M, draw the Line MN; then will ABLK, = AHMK, and KMNL, be the Sides and Bottom in View equal to *Fig.* 10. and the Lines IB, = IN, and IH, will be inviſible.

To find the Perſpective Elevation of a Cubical Figure fixt below the Eye, whoſe Plan is an Oblong, and the Point of Sight Oblique to the Object.

FIG. XI. Draw the Geometrical Plan ABCD, and fix the Point of Sight E, and Point of Diſtance F; take AB, and ſet it from A, to G, then draw the Occult Lines EA, and ED, alſo the Line of Diſtance FG, and where it cuts the Line EA as at M, draw the Line MN: raiſe the Perpendiculars AH and DI to an intended Height, and draw the Line IH; then draw the Occult Lines EI, and EH, from N raiſe a Perpendicular Line to touch the Line EI, as at K,

alſo from **M** raiſe a perpendicular Line to touch the Line **E H** as at **L**; draw the Line **K L**, then will **I H A D = H L M A**, and **H I K L** be the Sides and Top in view, equal to *Fig.* 12. And it's evident by the laſt Example, that the Lines **N D = N K** and **N M** is inviſible.

PLATE IV.

To find the Perſpective Plan of a Square viewed Angle-ways, whoſe Point of Sight is oblique to the Object.

F*IG.* XIII. Draw the Baſe Line **G L**, alſo **A B C D** the Geometrical Plan; draw the Line **F E** parallel to **D B**, **D E** to **B F**, and **G C** to **B D**; fix the Point of Sight **H**, and Point of Diſtance **I**; take **F A** and **F E**, and ſet them from **F**, to **K**, and **L**; draw the occult Lines **H G = H B** and **H F**, alſo the Lines of Diſtance **I K** and **I L**, and where they cut the Line **H F**, as at **M**, and **N**, draw the Lines **M O** and **N P**, then draw **M Q O B**, the Perſpective Plan required.

To find the Perſpective Plan of a Square, whoſe Angles are in a right Line with the Point of Sight.

F*IG.* XIV. Draw the Baſe Line **I G**, and the Geometrical Plan **A B C D**; then let **F E** be equal and parallel to **B D**; alſo **D E** to **B F**, and **C G** to **F A**. Fix the Point of Sight **I**, and Point of Diſtance **P**, and draw the occult Lines **I G = I B** and **I F**; take **F A** and **F E**, and

Pla. 4.

Fig. 13.

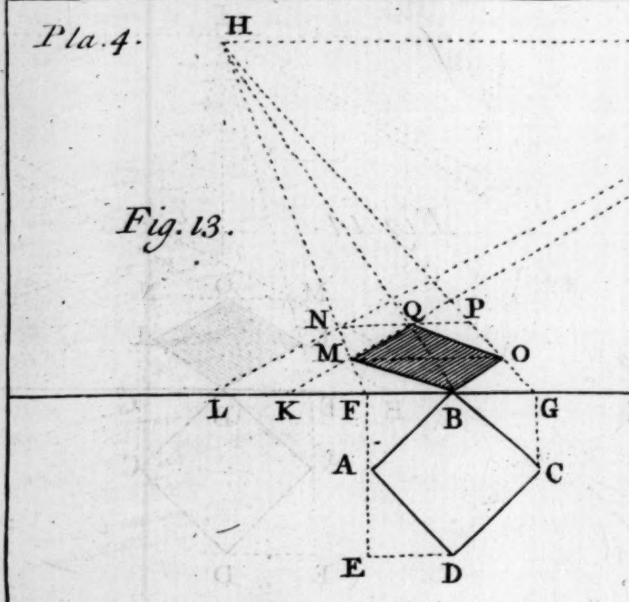


Fig. 14.

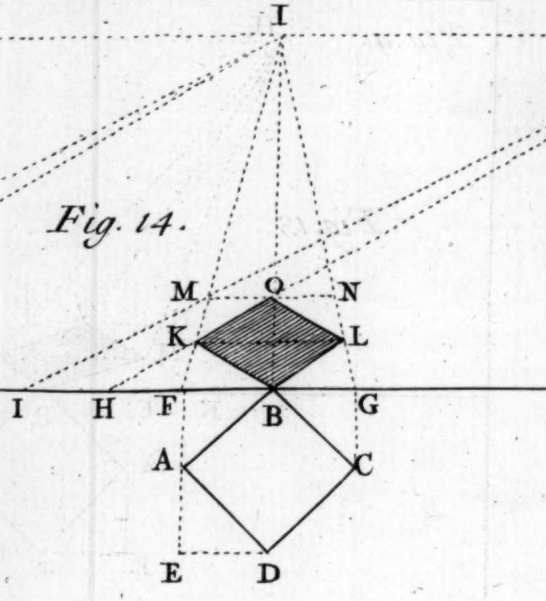


Fig. 15.

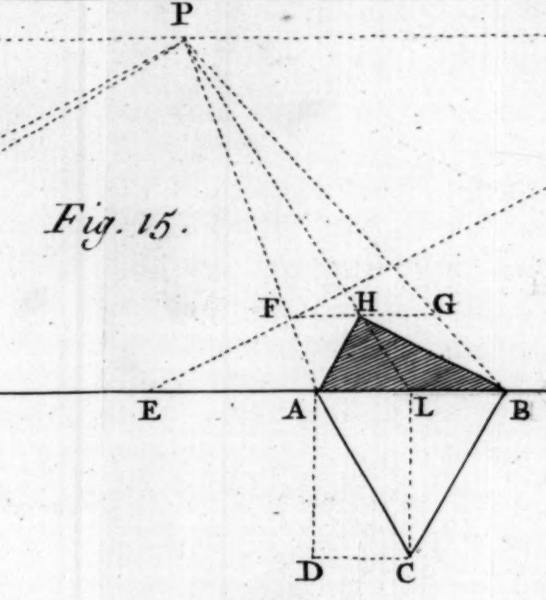


Fig. 16.

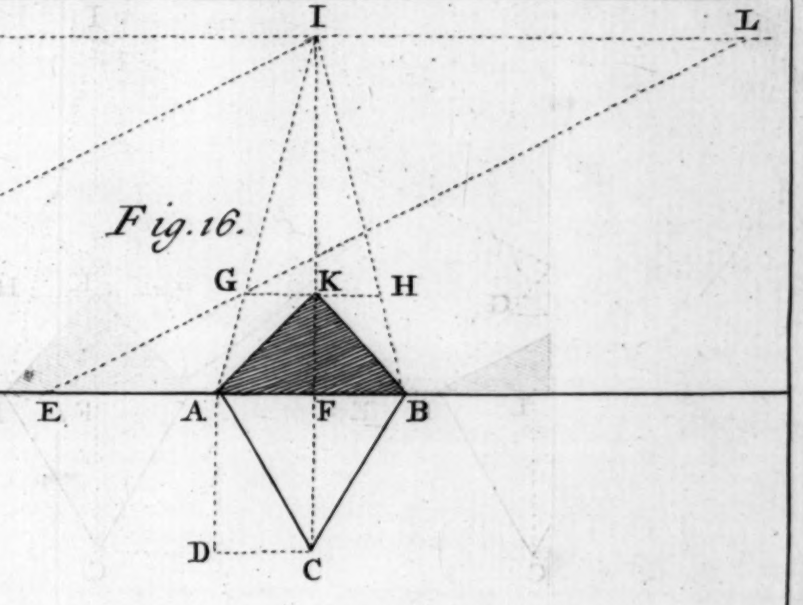


Fig. 17.

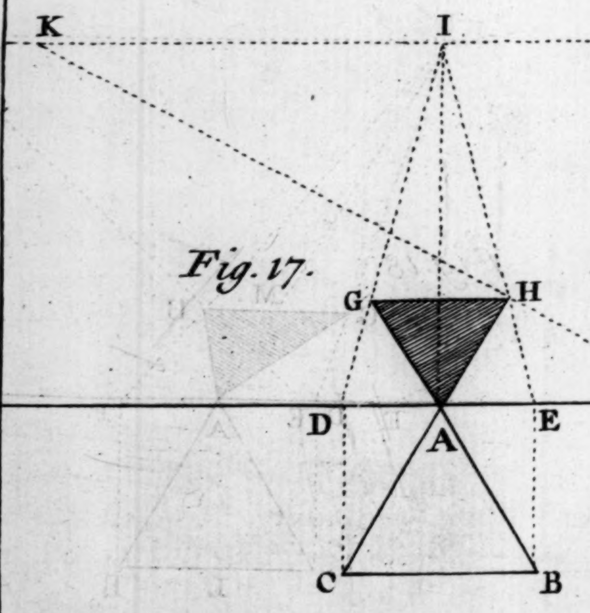


Fig. 18.

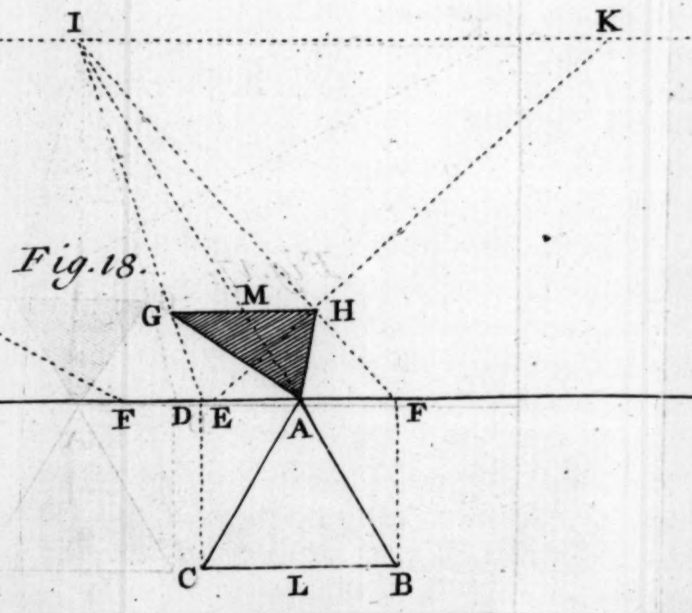


Fig. 19.

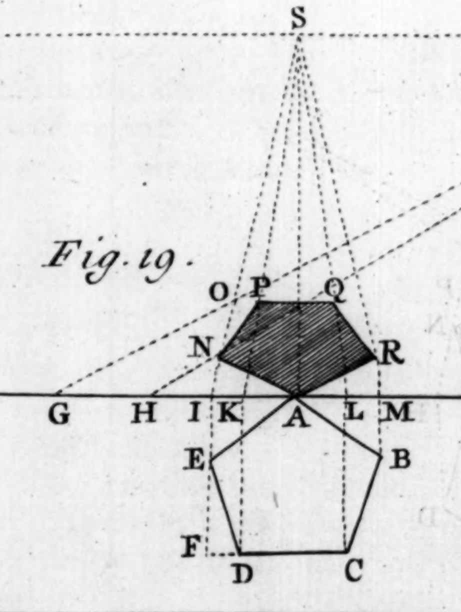
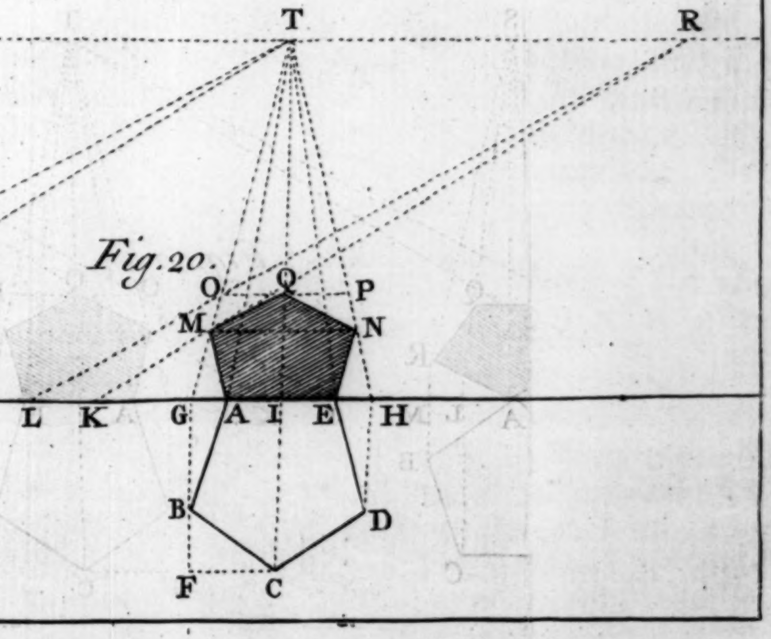


Fig. 20.



and ſet them from F, to H, and I; draw the Lines of Diſtance P H and P I, and where they cut the Line I F, as at K, and M, draw the Lines K L, and M N, parallel to G F; the Line **M** N cutting the occult Line I B, gives the extreme Point O, which repreſents the Point D, and the Points K, and L, repreſent the Points C and A; ſo that the Line O K B L, is the Perſpective Plan required.

To find the Perſpective Plan of an Equilateral Triangle at a View on one of its Sides, the Point of Sight being oblique to the Object.

FIG. XV. Draw B E, the Baſe Line, alſo the Geometrical Plan A B C; draw A D equal and parallel to L C, and C D to L A. Fix the Point of Sight P, and Point of Diſtance I; draw the occult Lines P A = P L, and P B. Then take A D and ſet it from A, to E, and draw the Line of Diſtance I E, and where it cuts the Line P A, as at F, draw the Line F G parallel to A B. Then draw H B, and H A; and A H B A is the Perſpective Plan required.

To find the Perſpective Plan of an Equilateral Triangle at a View on one of its Sides, the Point of Sight being in a right Line with the middle of the Object.

FIG. XVI. Draw B E, the Baſe Line, alſo the Geometrical Plan A B C. Draw the Lines A D, and D C equal and parallel to F C, and F A. Fix the Point of Sight I, and draw the occult Lines I A = I F and I B. Take A D

and ſet it from A to E; draw the Line of Diſtance L E, and where it cuts the occult Line I A as at G, draw the Line G H parallel to A B, which cuts the Line I F at K; then is K, the extreme Point which repreſents the Point C. Then draw A K B A, the Perſpective Plan required.

To find the Perſpective Plan of an Equilateral Triangle at an Angle View, whoſe Point of Sight is in a right Line with the middle of the Object.

F*IG.* XVII. Draw F D, the Baſe Line, alſo the Geometrical Plan A B C. Then draw C D, and B E, parallel to each other. Fix the Point of Sight I, and Point of Diſtance K, and draw the occult Lines I E = I A and I D. Take E B, and ſet it from E, to F, and draw the Line of Diſtance F K, and where it cuts the Line I E, as at H, draw the Line H G, parallel to E D. Then draw H A and G A; and the Lines A H G A, will be the Perſpective Plan required.

To find the Perſpective Plan of an Equilateral Triangle at an Angle View, whoſe Point of Sight is oblique to the Object.

F*IG.* XVIII. Draw F D the Baſe Line, alſo the Geometrical Plan A B C; draw C D and B F equal and parallel to each other. Fix the Point of Sight I, and Point of Diſtance K, and draw the occult Lines I F = I A and I D. Take F B and ſet it from F to E, and draw the Line of Diſtance K E; and where it cuts the Line I F as at H, draw the Line H G, parallel to F D:

draw the Lines A G and A H; then the Figure A H G A, is the Perſpective Plan required.

N. B. It may ſeem ſtrange to the Learner, that the width of the Object F B, or D C, is ſet from F, to E, on the inſide of the Figure, which has not hitherto been ſhewn; but this is drawn for an Example to ſhew which ever of the extreme Points of the occult Lines you ſet the width of the Object from, where-ever that occult Line is cut by the Line of Diſtance, that Point is the width of the Perſpective Plan, from whence the parallel Line, as H G is drawn. As for Example, If you ſhould take A L and ſet it from A towards D, and draw the Line of Diſtance to that determination, you'll find it cut the Line A I, at M; and if you ſet the width D C from D on the Baſe Line towards *Fig.* 17. and draw the Line of Diſtance to that determination, then you'll find the Line of Diſtance cut the occult Line I D, at G. And ſo of all other Perſpective Figures.

To find the Perſpective Plan of a Pentagon, or five-ſided Figure, whoſe Point of Sight or View is taken at one of the Angles, and in a right Line with the middle of the Object.

FIG. XIX. Draw M G, the Baſe Line, and draw the Geometrical Plan A B C D E; draw I F = K D and L C equal and parallel to each other; alſo B M parallel to L C. Fix the Point of Sight S, and Point of Diſtance T; draw the occult Lines S I = S K = S A = S L and S M; take I E and I F, and ſet them from

I, to H and G. Draw the Lines of Diſtance TG and TH, and where they cut the occult Line SI, as at N, and O, draw the Lines PQ and NR, parallel to MG; then draw the Lines AR = RQ = AN and NP, which is the Perſpective Plan required.

To find the Perſpective Plan of a Pentagon, whoſe Point of Sight or View is taken at one of the Sides, and in a right Line with the middle of the Object.

FIG. XX. Draw HL, the Baſe Line, alſo the Geometrical Plan ABCDE; draw GF equal and parallel to IC, alſo CF to IG, and DH to BG. Fix the Point of Sight T, and Point of Diſtance R, and draw the occult Lines TG = TA = TI = TE and TH; take GB and GF, and ſet them from G, to K, and L, draw the Lines of Diſtance RK, and RL, and where they cut the Line TG, as at M and O, draw the Lines MN, and OP, and Q will be the Point in proportion to C; then draw the Lines ENQMA, which is the Perſpective Plan required.

PLATE V.

To find the Perſpective Elevation of a Square Figure, at an Angle and oblique View.

FIG. XXI. Draw GL, the Baſe Line, alſo the Geometrical Plan ABCD; draw FE, equal and parallel to BD, alſo DE to BF, and GC to FA. Fix the Point of Sight H, and Point of Diſtance I; draw the occult Lines HG

Plate 5

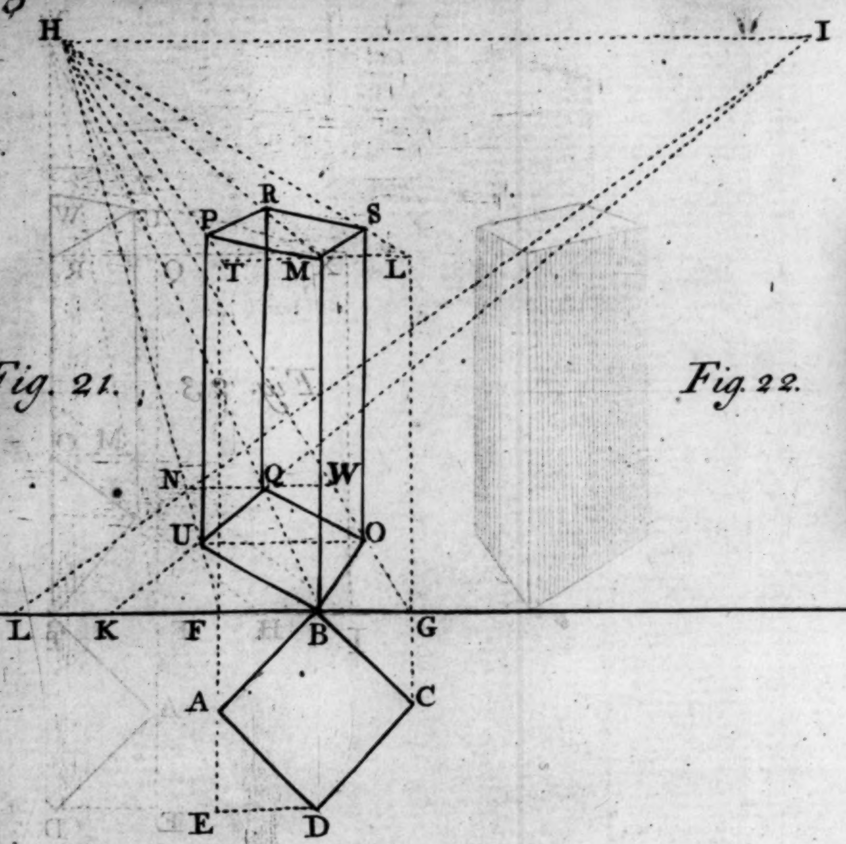


Fig. 21.

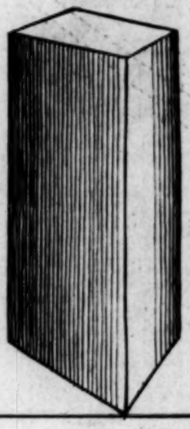


Fig. 22.

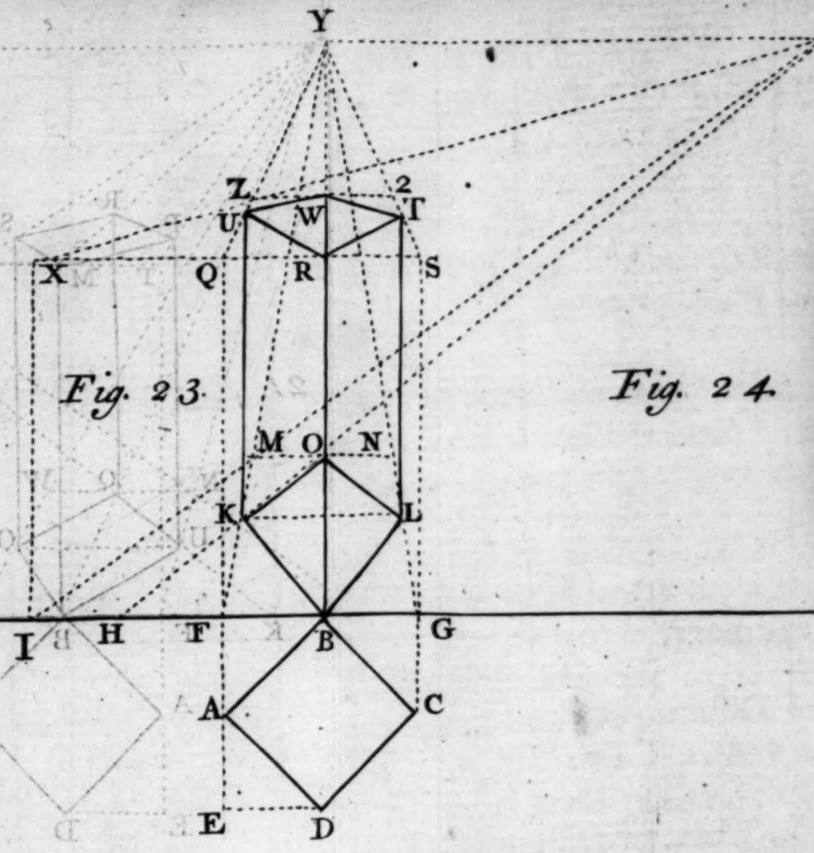


Fig. 23.

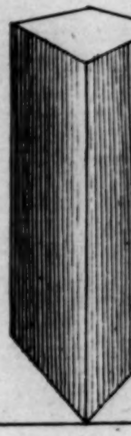


Fig. 24

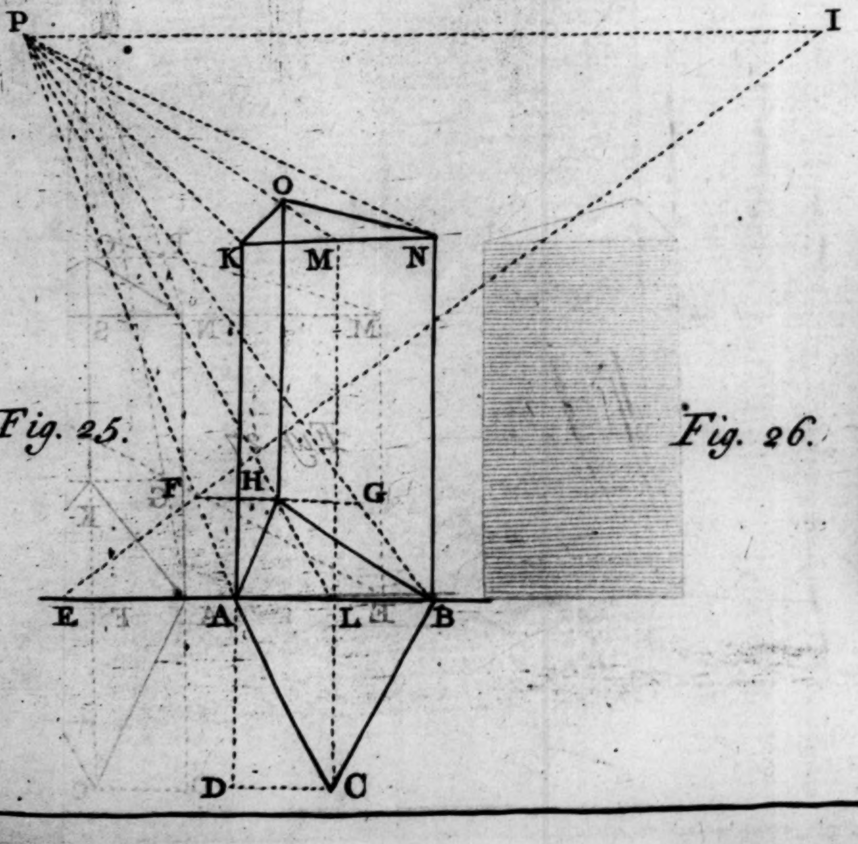


Fig. 25.

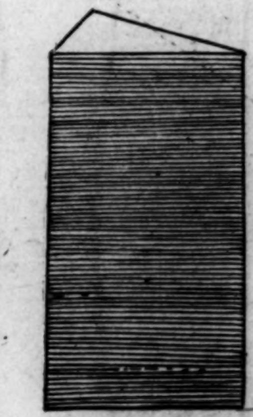


Fig. 26.

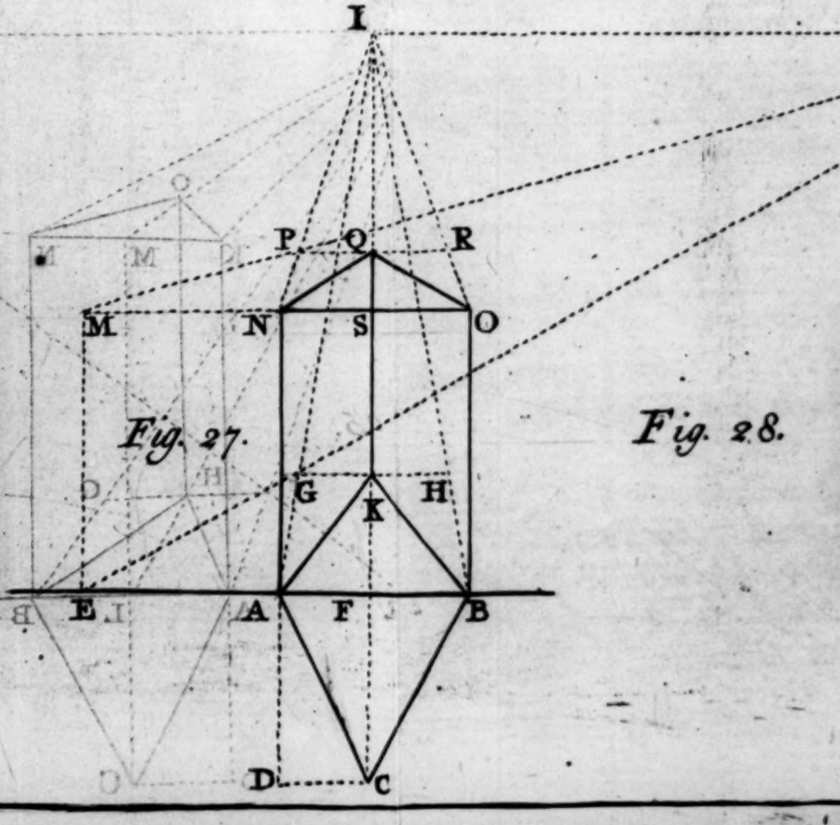


Fig. 27.

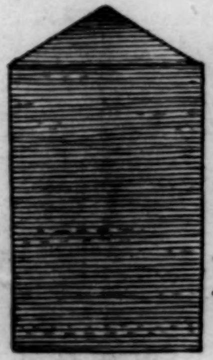


Fig. 28.

H G = H B and HF; take F A, and F E, and ſet them from F, to K, and L; draw the Lines of Diſtance I K and I L, and where they cut the Line H F, as at N, and U, draw the Lines U O, and N W; then draw the Lines QO = O B = B U and UQ; raiſe the dotted Lines G L, and F T, to your intended height, alſo the Line B M, and draw the occult Lines HL = H M, and H T. From U, raiſe a perpendicular Line to touch the Line H T, as at P. From Q, raiſe a perpendicular Line to touch the Line H M, as at R; and from O, raiſe a perpendicular Line to touch the Line H L, as at S; and draw the Lines R S M P R; then will M P U B = S M B O, and M S R P, be the Sides and Top in view; as may be ſeen by *Fig.* 22.

To find the Perſpective Elevation of a Square Figure at an Angle View, whoſe Point of Sight is in a right Line with the two Angles of the Figure.

FIG. XXIII. Draw G I, the Baſe Line, alſo the Geometrical Plan A B C D, and draw F E, equal and parallel to B D; alſo D E, to B F, and G C, to F A. Take F A and F E, and ſet them from F, to H, and I. Fix the Point of Sight Y, and Point of Diſtance P, draw the occult Lines Y G, and Y F, alſo the Lines of Diſtance P I, and P H, and where they cut the Line F Y, as at K and M, draw the Lines M N and K L. From the middle of the Line M N, as at O, draw the Lines O L = L B = B K and K O, raiſe the Perpendiculars F Q = B R and G S, to any intended height, and draw the occult Lines Y Q = Y R and Y S; then from K raiſe a Perpendicular to touch the Line Y Q as at U,

and from L raiſe a Perpendicular to touch the Line Y S as at T. You cannot find the length of the back Line O W by the Method, you find the length of Q R in *Fig.* 21. becauſe the two Angles R, and W, are in a right Line with the Line of Sight, ſo cannot have any other determination than this. From I, raiſe a perpendicular to X, equal to F Q, draw the Line Q X, then draw the Line of Diſtance P X, and where it cuts the occult Line Y Q, as at Z, draw the Line Z 2, parallel to S Q, which will cut the Line Y R as at W. Then W is the extremity of the back Angle; then draw the Lines W T R U W, which determines the required Elevation. *For the finiſh'd Draught, ſee* Fig. 24.

To find the Perſpective Elevation of an Equilateral Triangle at a View on one of its Sides, whoſe Point of Sight is oblique to the Object.

F*IG*. XXV. Draw the Geometrical Plan A B C, alſo the Lines A D and C D; fix the Point of Sight P, and Point of Diſtance I, draw the occult Lines P A = P L and P B; take A D, and ſet it from A to E, and draw the Line I E, and where it cuts the occult Line P A as at F, draw the Line F G parallel to A B, draw H B, and H A: then from A = B and L, raiſe Perpendiculars to K = N and M, draw the Line K N, then draw the occult Line P M. From H raiſe a Perpendicular to touch the Line M P as at O; draw the Lines O N, and O K, which is the Perſpective Elevation required. *Fig.* 26. ſhews what part of 25 is in View.

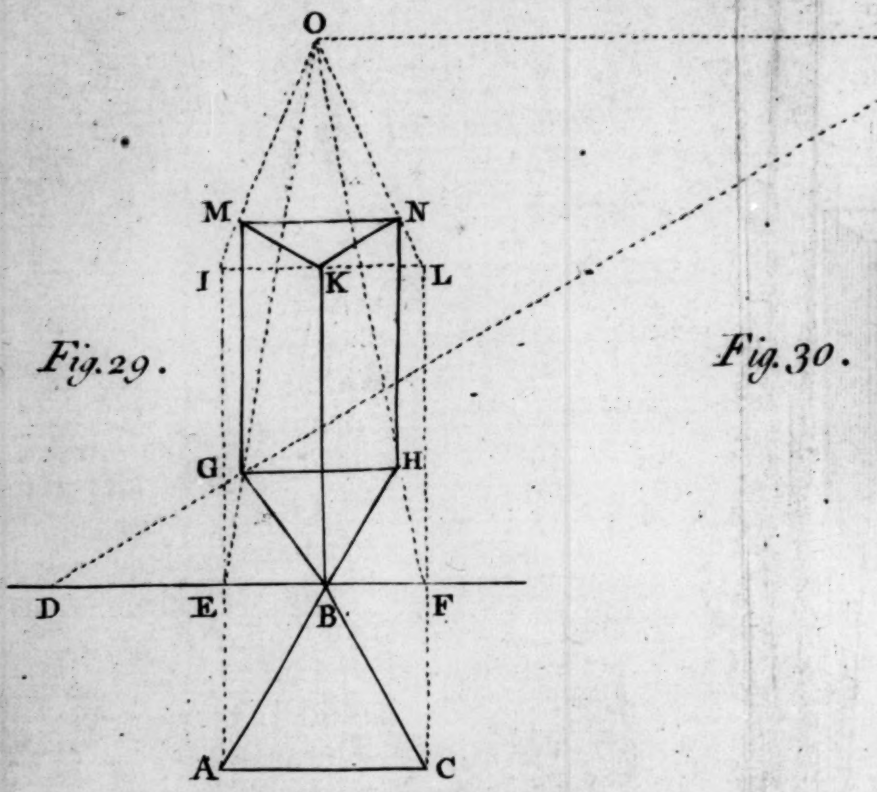


Fig. 29.

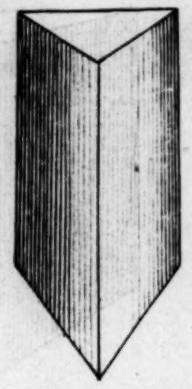
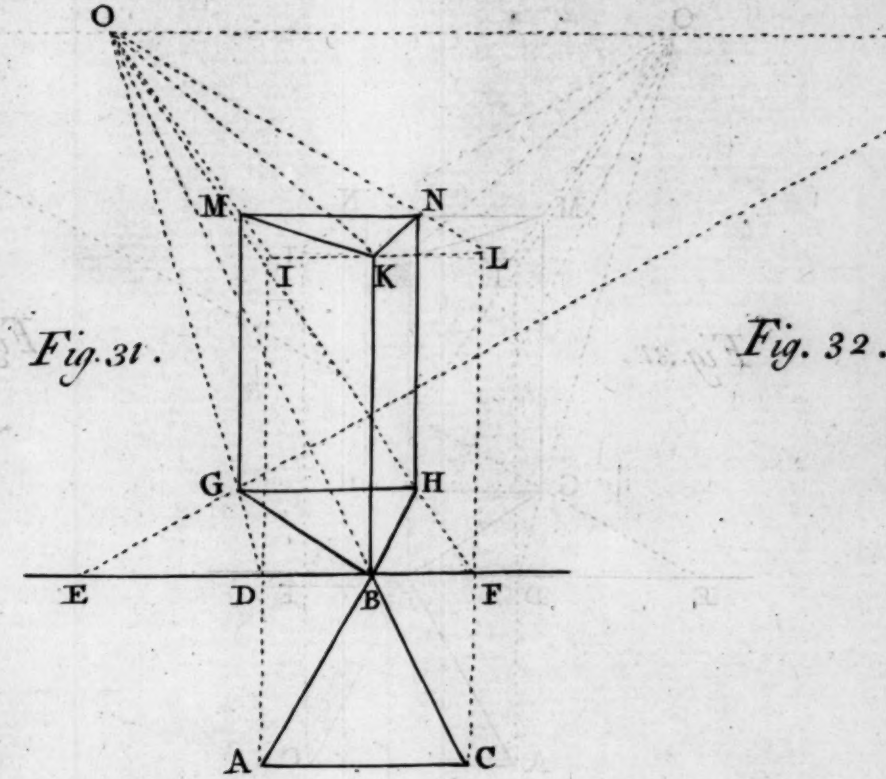


Fig. 30.



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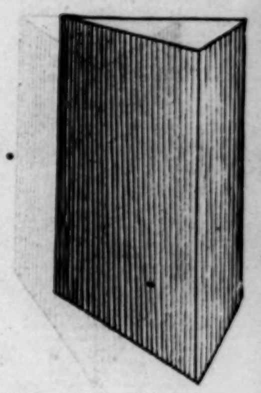


Fig. 32.

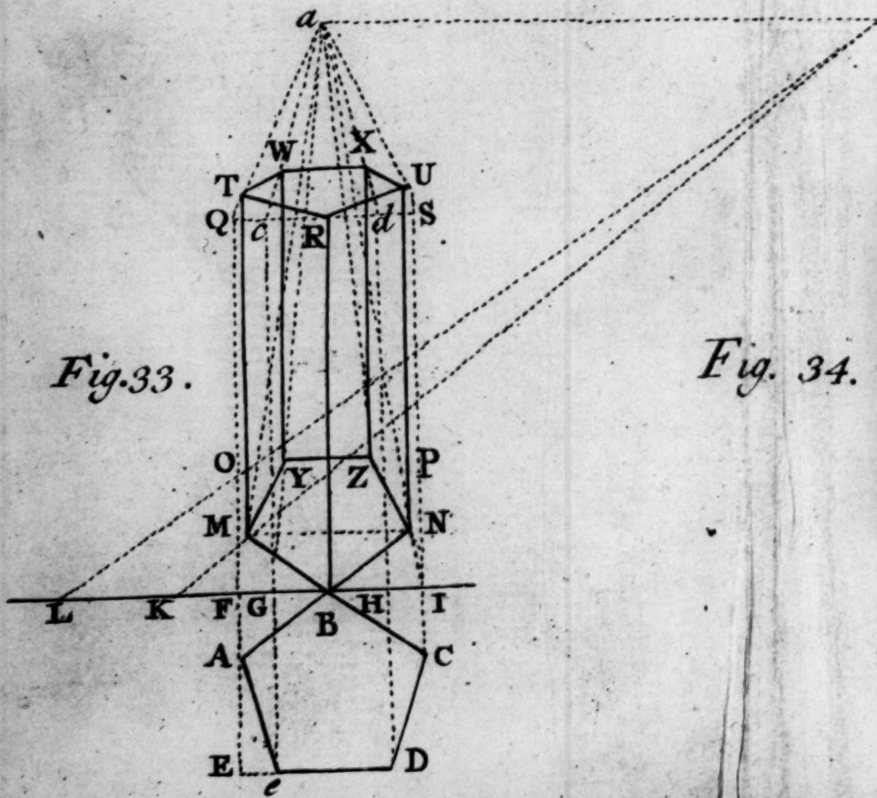


Fig. 33.

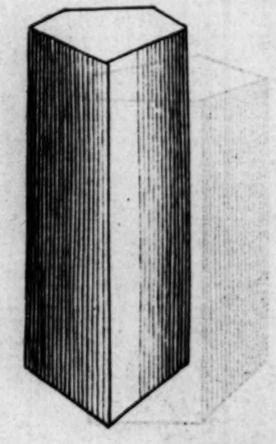


Fig. 34.

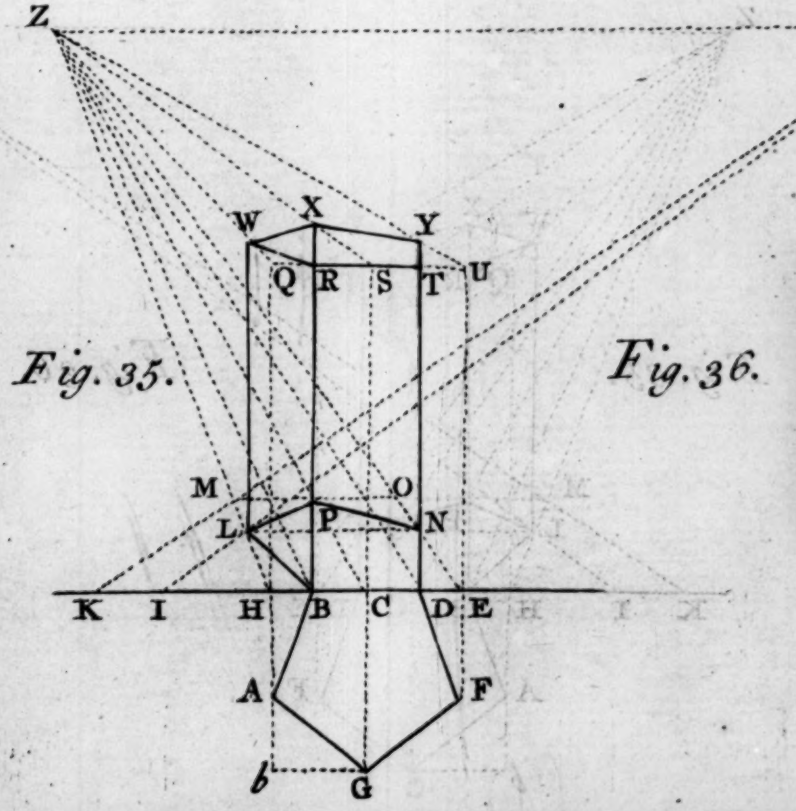


Fig. 35.

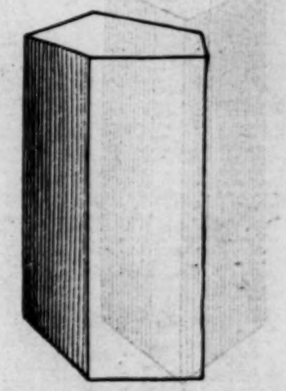


Fig. 36.

To find the Perſpective Elevation of an Equilateral Triangle at a View on one of its Sides, whoſe Point of Sight is in a right Line with the middle of the Object.

FIG. XXVII. Draw ABC, the Geometrical Plan, alſo AD, and CD. Fix the Point of Sight I, and Point of Diſtance L; take AD, and ſet it from A to E, draw the occult Lines IA and IB; then draw the Line LE, and where it cuts the Line IA, as at G, draw the Line GH from A=F and B; raiſe Perpendiculars to N=S and O at a given height, and draw the Line NO; raiſe the Perpendicular EM equal to AN, and draw the Line MN, then draw the occult Lines IN=IS, and IO; from M, draw a Line to the Point of Diſtance L, and where it cuts the Line IN, as at P, draw the Line PR, which cuts through the Line IS, and gives the Point Q; draw the Line QO, and QN, which is the Perſpective Elevation required. *Fig.* 28. is a View of *Fig.* 27.

PLATE VI.

To find the Perſpective Elevation of an Equilateral Triangle at an Angle View, whoſe Point of Sight is in a right Line with the middle of the Object.

FIG. XXIX. Draw ABC, the Geometrical Plan, alſo AE, and CF, parallel to each other; fix the Point of Sight O, and the Point of Diſtance P; take EA, and ſet it from D, to E, draw the occult Lines OE=OB and OF;

then draw the Line of Diſtance PD, and where it cuts the Line OE, as at G, draw the Line GH, parallel to EF, and draw the Lines GB, and HB; raiſe the perpendicular Lines EI=BK ,and FL, and draw the occult Lines OI=OK, and OL. From G raiſe a perpendicular Line to touch the Line IO as at M, alſo from H raiſe a Perpendicular to touch the Line OL, as at N; draw the Lines MN=NK and KM, which determines the Perſpective Elevation required. For the finiſh'd Draught, ſee *Fig.* 30.

To find the Perſpective Elevation of an Equilateral Triangle at an Angle View, whoſe Point of Sight is Oblique to the Object.

FIG. XXXI. Draw ABC, the Geometrical Plan, alſo AD, and CF, parallel to each other, take AD and ſet it from D to E, fix the Point of Sight O, and Point of Diſtance P; draw the Occult Lines OD=OB and OF, alſo the Line of Diſtance EP, and where it cuts the Line OD as at G, draw the Line GH parallel to FD, then from D=B and F, raiſe Perpendiculars to a given Heighth, as IKL, and draw the Occult Lines OI=OK and OL, from G; raiſe a Perpendicular to touch the Line OI, as at M, alſo from H, to touch the Line OL, as at N, and draw the Lines KN=NM, and MK, which is the Perſpective Elevation required. For the finiſh'd Draught, ſee *Fig.* 32.

To find the Perſpective Elevation of a Pentagon at an Angle View, whoſe Point of Sight is in a right Line, with the Middle of the Object.

FIG. XXXIII. Draw the Geometrical Plan ABCD *e*, alſo the Line FE=G*e*=HD, and IC parallel to each other; fix the Point of Sight *a*, and Point of Diſtance *b*, draw the Occult Lines *a*F=*a*G=*a*B=*a*H and *a*I; take FA and FE, and ſet them from F to K and L, and draw the Lines of Diſtance *b*K and *b*L, and where they cut the Line *a*F as at M and O, draw the Lines OP and MN (YZ is drawn between the Occult Lines *a*H and *a*G, and is perſpectively in proportion to D*e*) draw ZN=NB =BM and MY; from FGBH and I, raiſe Perpendiculars to a given Heighth, as QCR*d*S, and draw the Occult Lines *a*Q=*ac*=*a*R=*ad* and *as*. From M and N raiſe Perpendiculars to touch the Lines *a*Q and *as*, as at T and U; alſo from Y and Z, to touch the Lines *ac* and *ad*, as at W and X: draw the Lines XURTWX, which is the Perſpective Elevation required. For a finiſh'd Draught, ſee *Fig.* 34.

To find the Perſpective Elevation of a Pentagon at a View at one of its Sides, whoſe Point of Sight is Oblique to the Object.

FIG. XXXV. Draw the Geometrical Plan ABDFG, alſo the Lines H*b*=CG=EF and G*b*, fix the Point of Sight Z, and Point of Diſtance *a*; draw the Occult Lines ZH=ZB= ZC=ZD and ZE; take HA, and H*b*, and ſet them from H, to I, and K: draw the Lines *a*K

and *a*I, and where they cut the Line ZH, as at L, and M, draw the Lines MO and LN; then draw DN, = NP, = PL, and LB; from HBCD, and E, raiſe Perpendiculars to a given height, as to QRSTU, and draw the occult Lines ZQ, = ZS, and ZU, then from L and N raiſe Perpendiculars to touch the Lines ZQ and ZU, at Y and W; alſo from P, to cut the Line ZS, as at X, draw the Lines XYTRWX, the Perſpective Elevation required. For a finiſh'd Draught, ſee *Fig.* 36.

PLATE VII.

To find the Perſpective Plan of an Octogon viewed at an Angle, whoſe Point of Sight is oblique to the Object.

FIG. XXXVII. Draw the Plan QRFEMNOP, alſo the Lines KL, DE and BF, parallel to QM; then draw the Lines ML = NS, and PT parallel to the Baſe Line, and fix the Point of Sight and Point of Diſtance Y and Z: draw the occult Lines YB = YD = YQ = YC and YK; take KT, KO KS, and KL, and ſet them from K to I = H = G and A; draw the Lines of Diſtance ZA = ZG = ZH and ZI, and where they cut the occult Line YK, as at 1, 2, 3, 4, draw the parallel Lines 1 . 5 = 2 . 6 = 3 . 7 and 4 . 8, which gives the ſeveral Points of the Perſpective Plan required.

Pla 7

Fig. 37.

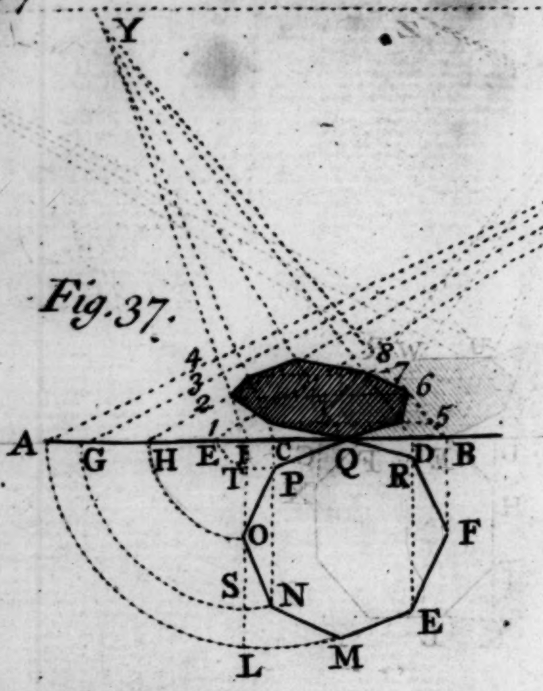


Fig. 38.

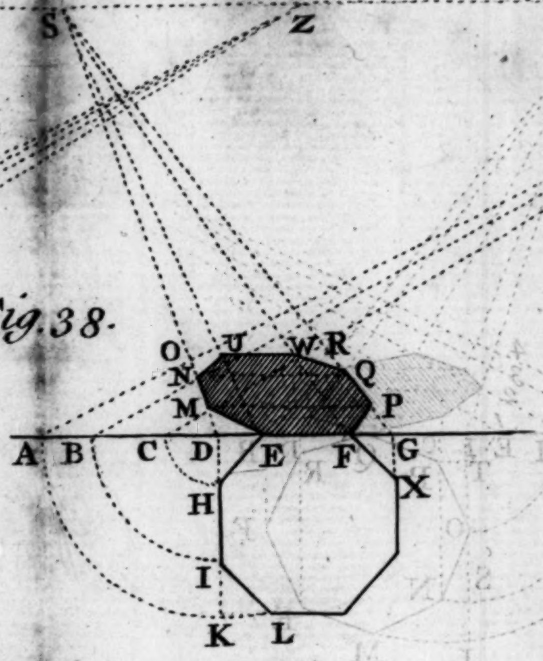


Fig. 39.

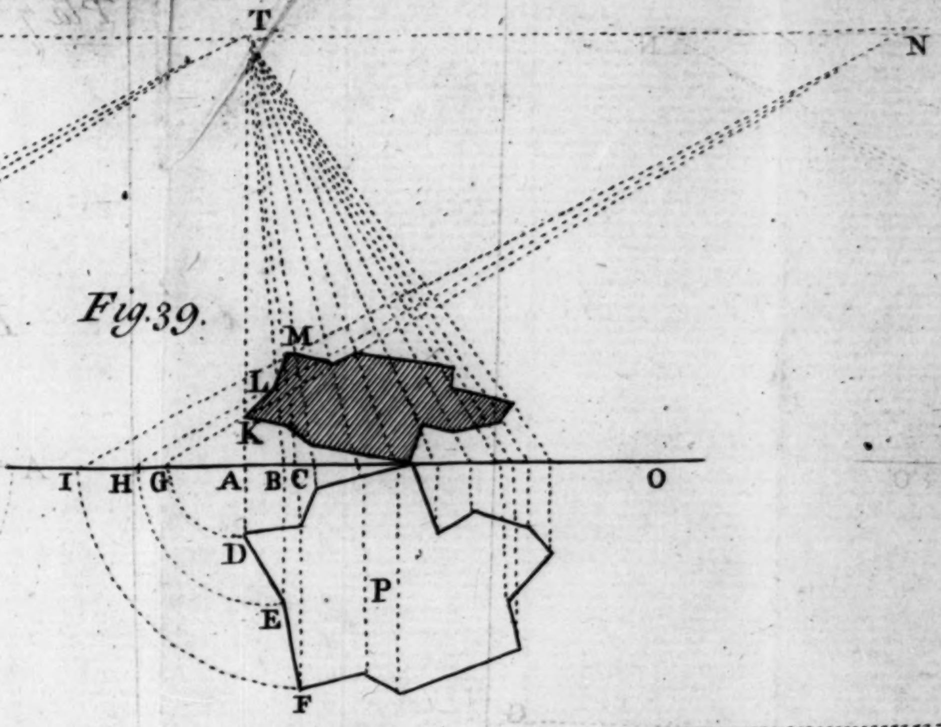


Fig. 40.

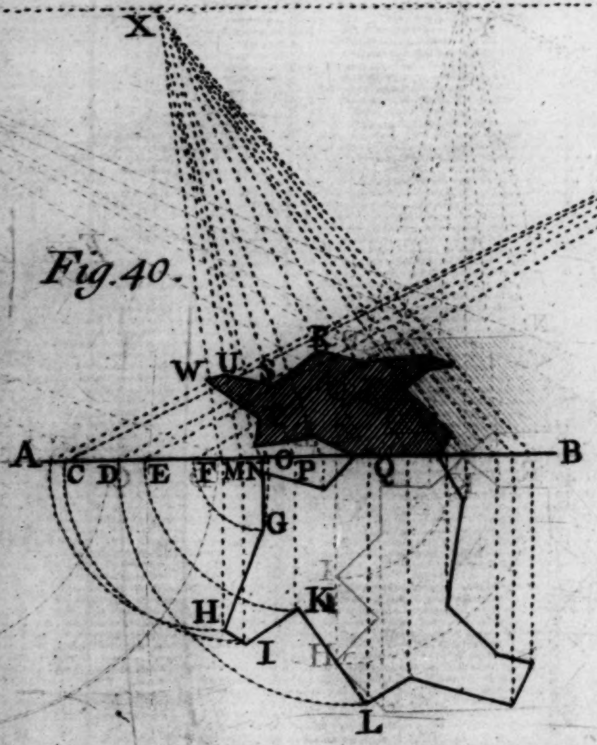


Fig. 41.

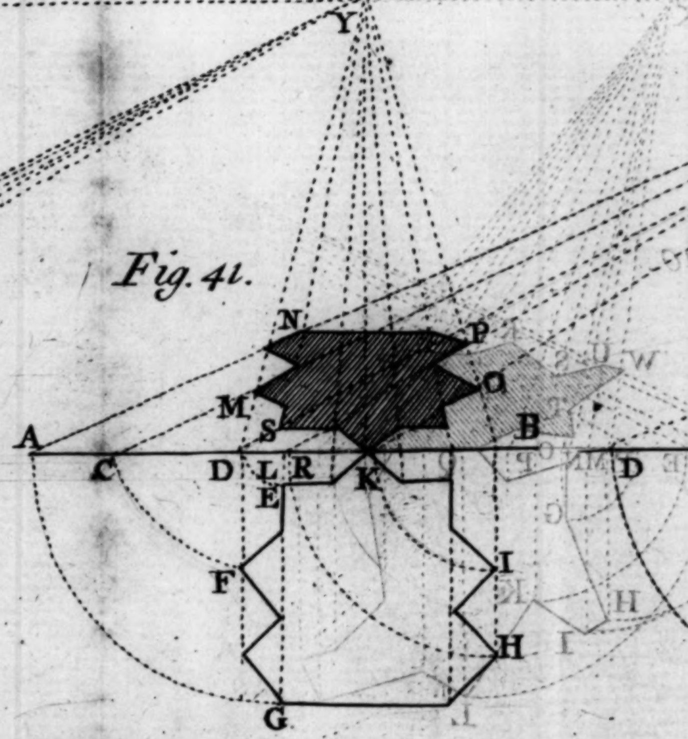
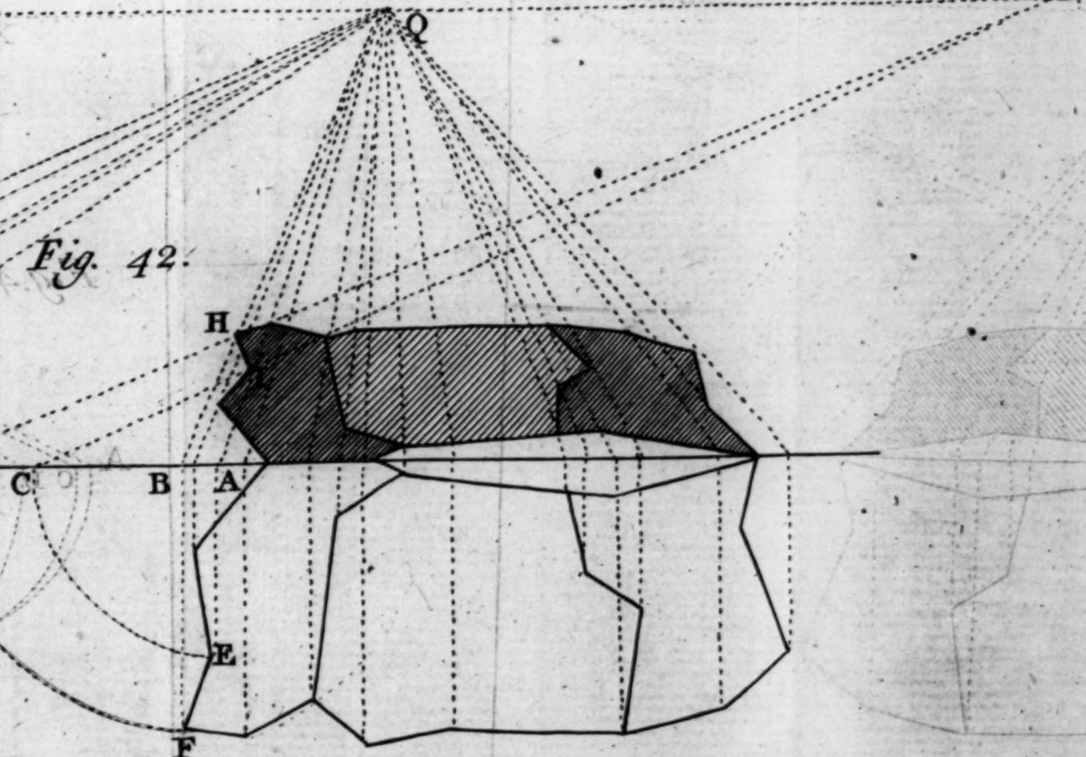


Fig. 42.



To find the Perſpective Plan of an Octogon, viewed on one of its Sides, whoſe Point of Sight is Oblique to the Object.

FIG. XXXVIII. Draw the Geometrical Plan, alſo the Lines DK=LK, and GX; fix the Points of Sight, and Diſtance S, and T, and draw the occult Lines SG=SF=SE, and SD; take DH=DI, and DK, and ſet them from D to C, B and A: draw the Lines of Diſtance TA=TB, and TC, and where they cut the occult Line SD, as at MN, and O, draw the parallel Lines MP=NQ, and OR, which gives the Angles Point's MNUWQPFE.

To find the Perſpective Plan of an irregular Figure or Field, whoſe Point of Sight is Oblique.

FIG. XXXIX. Draw the Baſe Line IO, alſo the Geometrical Plan P, from whoſe Angle, draw Perpendicular Lines, to the Baſe Line IO, as DA=EB=FC, *&c.* then draw the occult Lines, as TA=TB=TC, *&c.* Take AD in your Compaſſes, with one Foot in A, ſtrike the Arch DG, draw the Line NG, and where it cuts the occult Line TA, as at K, leave a Mark or Point; then take BE in your Compaſſes, with one Foot in B, ſtrike the Arch EH, draw the Line of Diſtance HN, and where it cuts the Line TB, as at L, draw the Line KL; then take CF in your Compaſſes, ſet one Foot in C, ſtrike the Arch FI, draw the Line of Diſtance IN, and where it cuts the Line TC, as at M, draw the Line LM, and

ſo on, till you have traced the Figure all round.

N. B. You may do all the foregoing Figures, and all regular and irregular Figures whatever, by this Method, which is very uſeful, eſpecially in irregular Figures.

F*IG.* XL. Draw A B, the Baſe Line, alſo the Geometrical Plan, from all its Angles; draw perpendicular to the Baſe Line, as from H, to M, from I, to N, from G, to O, from K, to P, from L, to Q, *&c.* and draw the occult Lines XM=XN=XO=XP=XQ, *&c.* Take O G in your Compaſſes; ſet one Foot in O, ſtrike the Arch G F, draw the Line YF, and where it cuts the Line XO, as at T, leave a Mark or Point; then take M H in your Compaſſes; ſet one Foot in M, ſtrike the Arch H A, draw the Line A Y, and where it cuts the Line XM, as at W, draw the Line T W. Take NI, in your Compaſſes, ſet one Foot in N, ſtrike the Arch I C, and draw the Line CY; and where it cuts the Line XN, as at U, draw the Line U W. Take P K in your Compaſſes, ſet one Foot in P, ſtrike the Arch K E, draw the Line E Y, and where it cuts the Line P X, as at S, draw the Line U S; take Q L in your Compaſſes, ſet one Foot in Q, ſtrike the Arch L D, draw the Line D Y, and where it cuts the Line Q X, as at R, draw the Line S R, and ſo on, till the Figure is finiſh'd.

To

To find the Perſpective Plan of a Fortification, the Point of Sight being in a Right Line, with the middle of the Object.

FIG. XLI. Draw the Baſe Line A B, alſo the Geometrical Plan from every Angle; draw Perpendicular Lines, to the Line A B, from L; ſtrike the Arch G A, draw the Line A Q, and where it cuts the Line Y L, as at N, is the Angle which repreſents the Angle G, from D. Strike the Arch F C, draw the Line C Q, and where it cuts the Line Y D, as at M, is the Angle which repreſents the Angle F, from L; ſtrike the Arch E D, and draw the Line D Q, and where it cuts the Line Y L, as at S, repreſents the Angle E, from B; ſtrike the Arch I K, draw the Line K Q, and where it cuts the Line Y B, as at O, repreſents the Angle I, from B. Strike the Arch H R, draw the Line Q R, and where it cuts the Line Y B, as at P, repreſents the Angle H, and ſo on for the other Angles.

FIG. XLII. Repreſents three irregular Fields, the Point of Sight is Q, and Point of Diſtance G; draw Perpendicular Lines from every Angle of the Figure, to the Baſe Line, and occult Lines from Q, to meet them in all reſpects as the foregoing Examples. From B, ſtrike the Arch F D, draw the Line D G, and where it cuts the Line Q B, as at H, is the Angle which repreſents the Angle F; from A, ſtrike the Arch E C, draw the Line C G, and where it cuts the Line Q A, as at I, is the Angle that repreſents the Angle E, and ſo on to the other Angles.

PLATE VIII.

To find the Perſpective Elevation of an Octogon viewed on one of its Sides, whoſe Point of Sight is Oblique.

FIG. XLIII. Draw the Plans by the Rule laid down in *Fig.* 38. raiſe the Perpendicular Lines CG, = DH, = EI, and FK, to your intended height; and draw the occult Lines GY, = HY, IY, and = KY; from Q, and P, raiſe Perpendiculars to touch the Line YG, as at X, and W; from O, to touch the Line HY, as at U; from N, to touch the Line IY, as at T; from L, and M, to touch the Line KY, as at R, and S; then draw the Lines IH = HX = XW = WU = UT = TS = SR, and RI; and the Figure is finiſh'd, as may be ſeen by *Fig.* 44.

To find the Perſpective Elevation of an Octogon viewed at an Angle, the Point of Sight being in a Right Line, with the middle of the Figure.

FIG. XLV. Draw the Plans AB, by the Rule laid down in *Fig.* 37. raiſe the Perpendicular Lines CI = DK = EL = FM, and GN, to a given height; draw the occult Lines *d*I = *d*K = *d*L = *d*M, and *d*N; from U raiſe a Perpendicular to touch the Line *d*N, at *b*; from O and T, raiſe Perpendiculars to touch the Line *d*M, at *c* and *a*; from Q raiſe a Perpendicular Line to touch the Line I*d*, at X; alſo from P and R, to touch the Line *d*K, at W, and Y. The Point Z can't be found by a Perpendicular,

Plate 8

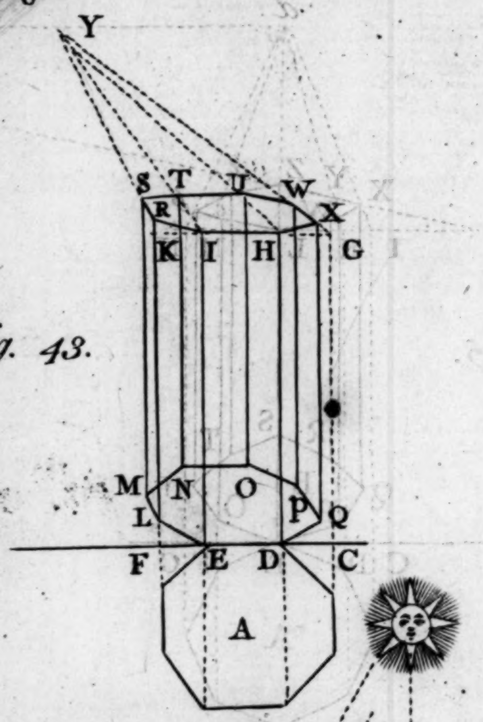
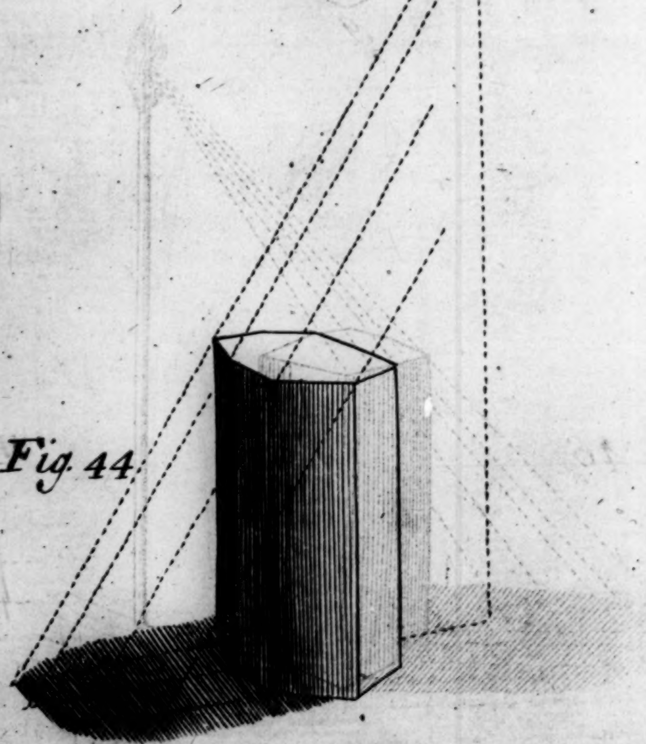


Fig. 43.



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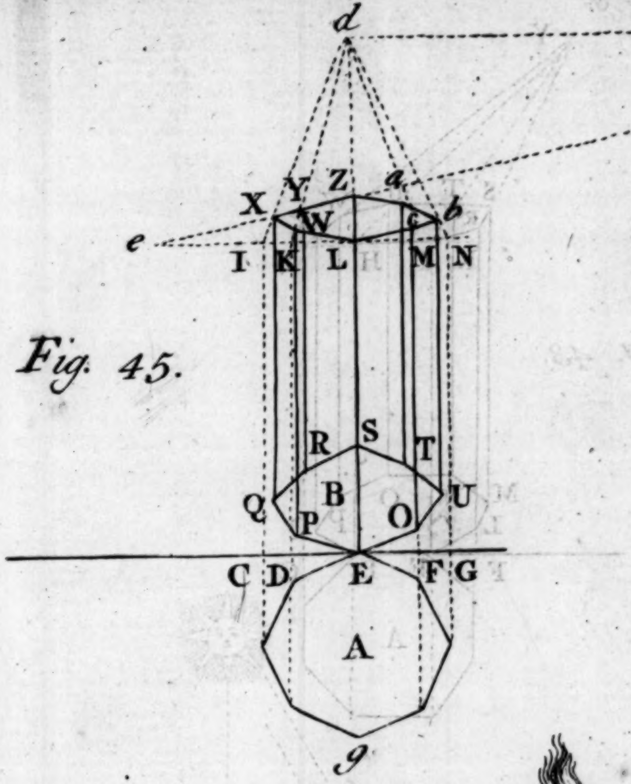


Fig. 45.

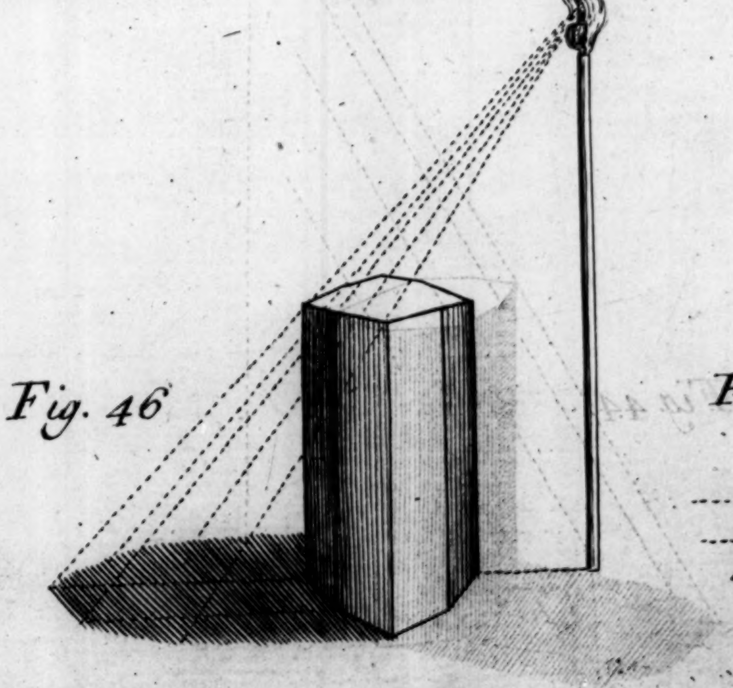


Fig. 46

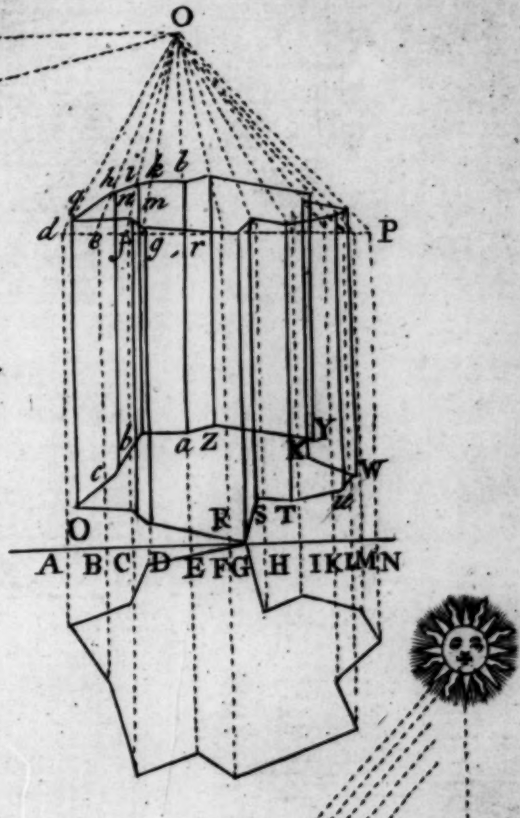


Fig. 47

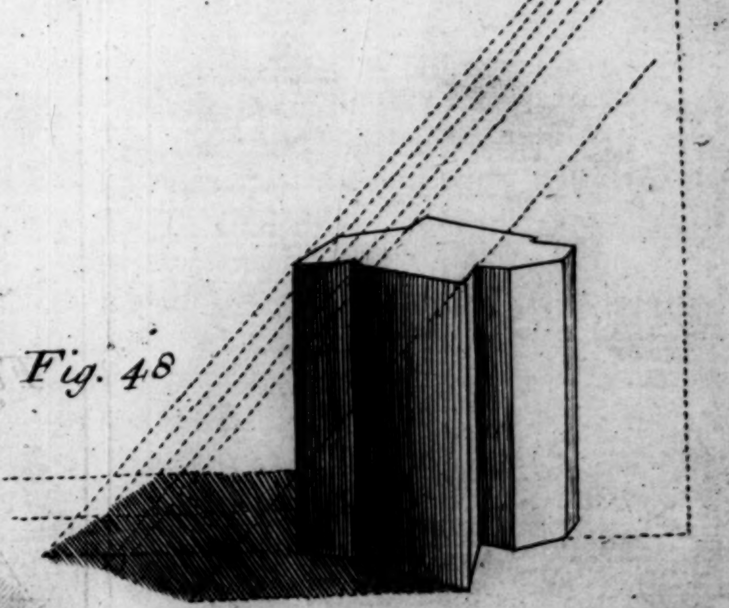


Fig. 48

Plate. 9.

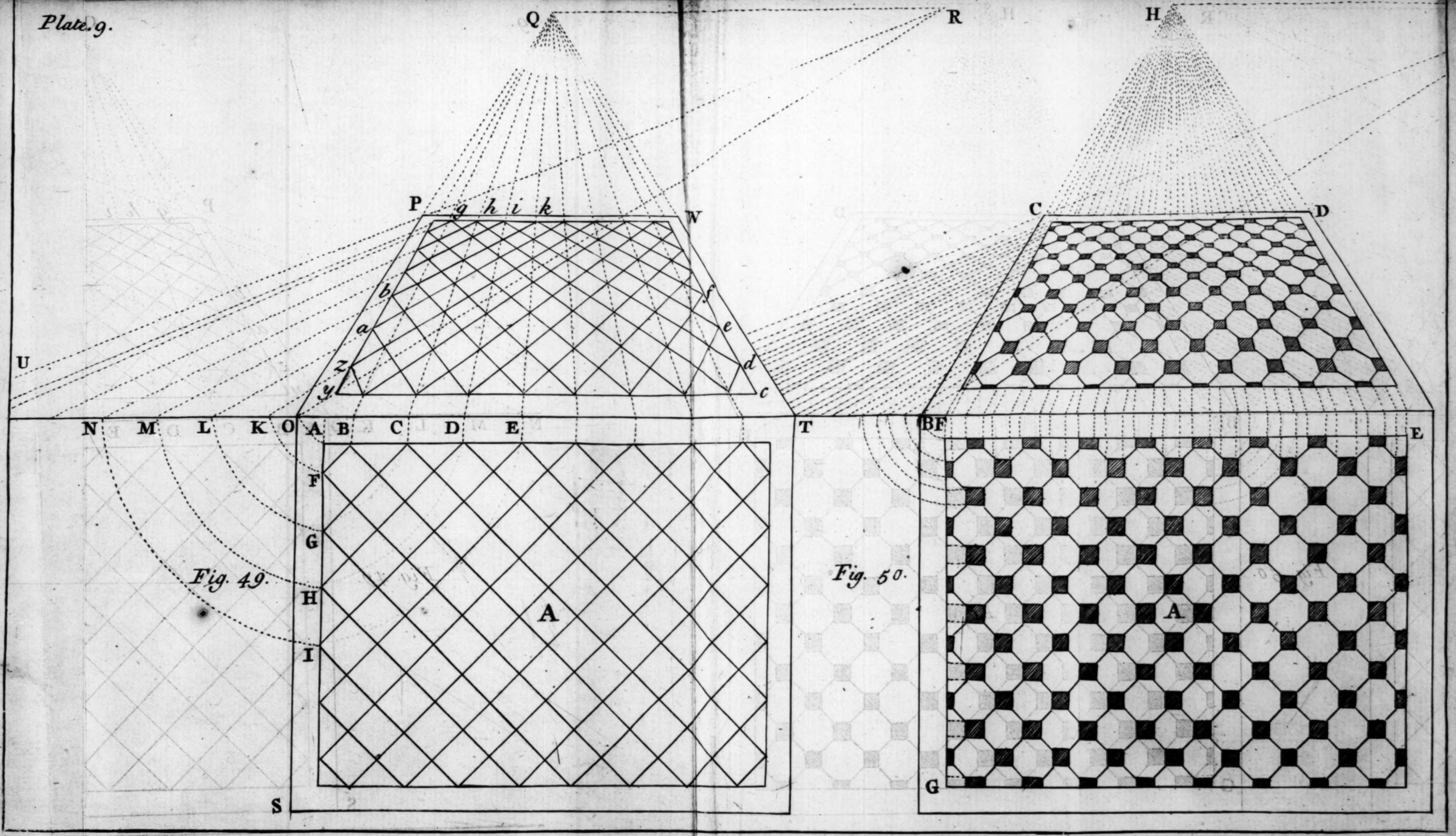


Fig. 49.

Fig. 50.

pendicular, as the other Points are; becauſe the Point of Sight is in a right Line, with the middle of the Figure. But, thus, take E *g*, and ſet it from L to *e*; draw the Line of Diſtance *e* O, and where it cuts the Line L *d*, as at Z, is the Point Z; draw the Line Z *a* — *a b* = *b c* = *c* L = L W = W X = X Y, and Y Z; and the Work is finiſh'd, as is ſeen in *Fig.* 46.

To find the Perſpective Elevation of an irregular Figure.

FIG. XLVII. Draw the Plans, by the Rule laid down in *Fig.* 39. from every Angle of the Geometrical Plan; draw perpendicular Lines to the Line A N, as to A B C D, *&c.* from which, raiſe other Perpendicular Lines to a given height, P *d*, as is ſeen by the dotted Line A D = B *e* = C *f* and D *g*, *&c.* Draw the occult Lines from O, to *d e f g*, &c. then from every Angle in the Perſpective Plan, draw Perpendicular Lines to cut the occult Lines, as from O, to cut the Line *o d*, as at *q*, = *eo*, at *h*, = *f o*, at *i*, = *g o*, at *k*, = *r o*, at *l*, *&c.* draw the Lines *g h i k l*, *&c.* and the Work is finiſh'd, as may be ſeen by *Fig.* 48.

PLATE IX.

To find the Perſpective of an Angle or Diamond Pavement.

FIG. XLIX. Draw the Geometrical Plan A, fix the Point of Sight, and Diſtance Q and R, and draw the occult Lines Q O = Q A = Q B

QB=QC=QD=QE, &c. Set OS from O, on the Baſe Line, ſuppoſing to U; draw the Line of Diſtance UR, and where it cuts the Line QO, as at P, draw the Line PW, parallel to TO, from A; take FGHI, &c. and ſet them from A, to OKLMN, &c. Draw the Lines of Diſtance OR=KR=LR=MR=NR, &c. and where they cut the Line QA, as at YZ*ab*, &c. gives the Point *cdef*, &c. by drawing Lines from YZ*ab*, &c. parallel to TO. Draw the Border round, as in the Example, (and as the occult Lines give the Points BCDE*ghik*, &c. ſo do the Lines of Diſtance give the Points YZ*abcdef*, &c.) draw the Diagonal Lines, and the Work is finiſh'd.

To find the Perſpective of an Octogon Pavement.

FIG. L. Draw the Geometrical Plan A, alſo the dotted Lines from the Squares, to the Lines EF, and FG, as in the Example; from the Point of Sight H, draw occult Lines, to meet thoſe dotted Lines, on the Baſe Line EF, and draw the Border BCDEB, by the foregoing Rule; then take all the Diviſions on the Line FG, and ſet them from F, on the Baſe Line towards T, as may be ſeen by the Arches ſtruck from F; from thoſe Diviſions, draw Lines to the Point of Diſtance, and where they cut the Line HF, gives the Perſpective Widths of the Squares, parallel to EF, as the occult Lines give their Widths perſpectively parallel to ED.

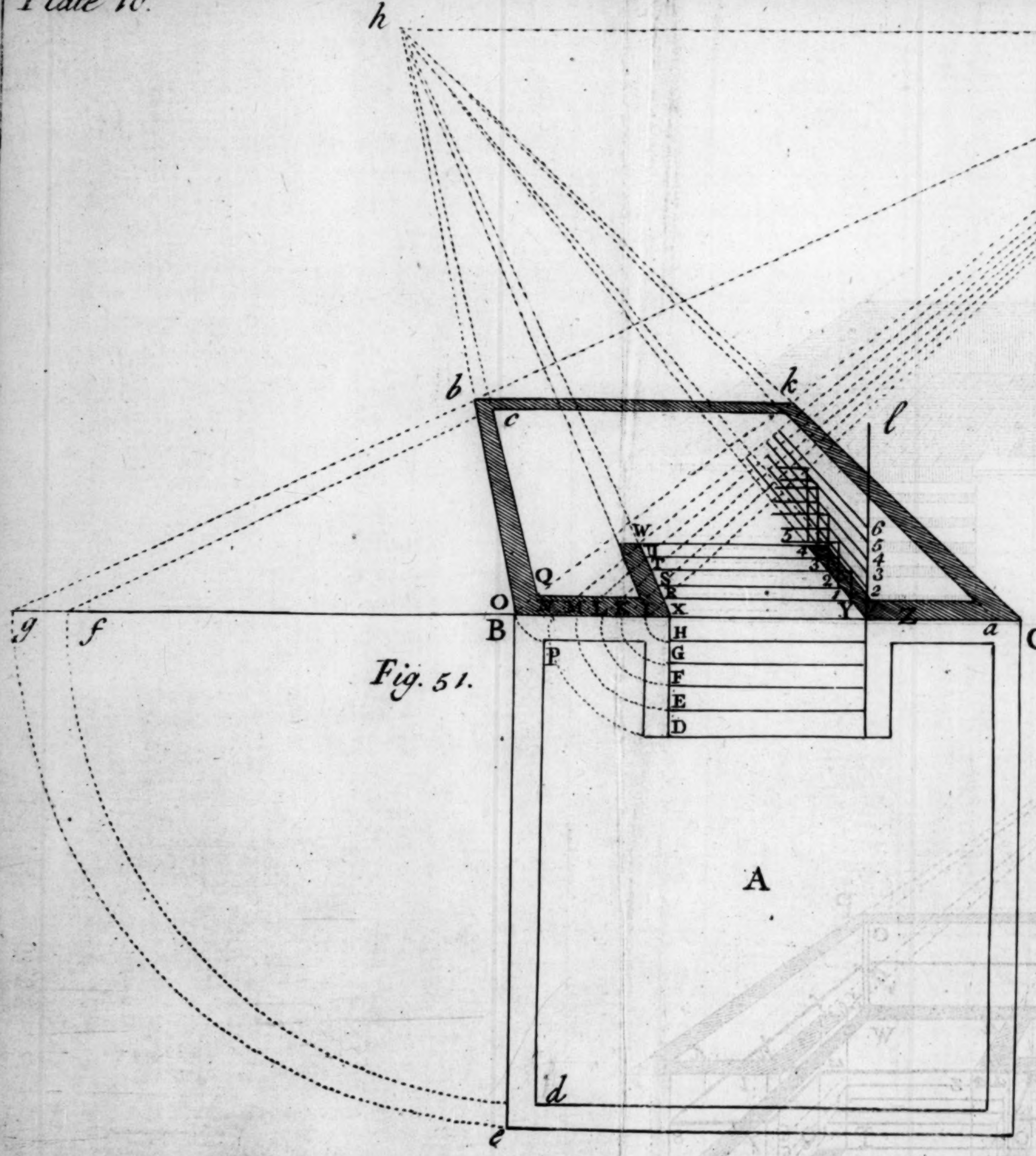


Fig. 51.

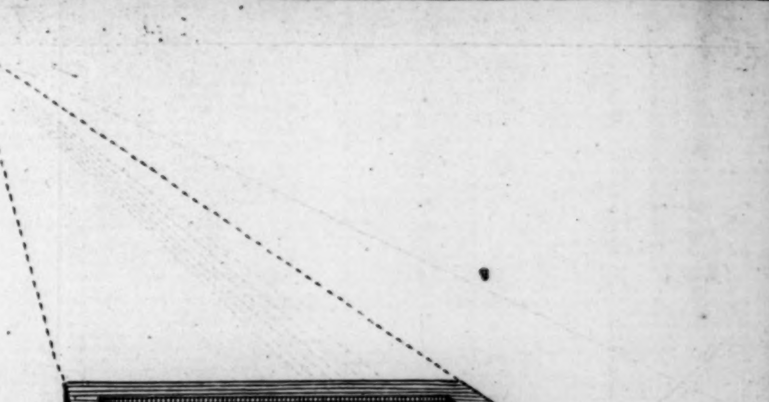


Fig. 53.

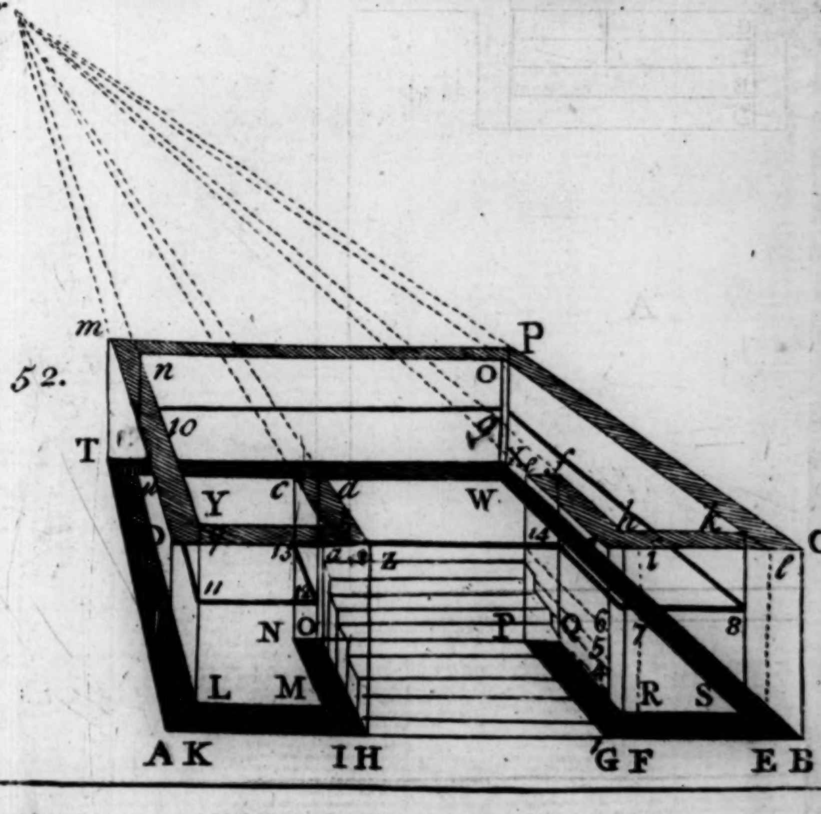


Fig. 52.

PLATE X.

FIG. LI. is the Plan of a Stage for Maſters of Defence to decide their Combats in. To find its Perſpective Plan; firſt, draw the Geometrical Plan A, fix the Points of Sight, and Diſtance *h* and *i*; draw the occult Lines B*h* = N*h* = I*h* = X*h* = Y*h* = Z*h* = *ah* and C*h*; take B*e*, and ſet it to *g*, draw the Line *gi*, which gives the Point *b*, draw the Line *bk*; take N*d*, and ſet it to *f*; draw the Line *fi*, which cuts the Line *h*N, at *c*, and gives the Perſpective Width of the back Wall. Take NP, ſet it to O, draw the Line B*i*, which cuts the Line *h*N, at Q, and gives the Width of the front Wall. To draw the Steps, take XH, and ſet it to I, = XG, to K, = XF, to L, = XE, to M, and XD, to N, draw the Lines I*i* = K*i* = L*i* = M*i*, and N*i*; and where they cut the Line *h*X, as at RSTU and W, gives the Perſpective Widths of the Steps, which draw parallel to the Baſe BC, and the Plan is finiſh'd.

To draw the Perſpective Elevation of the Stage.

FIG. LII. Draw the Ground-Plan (which in the Example is colour'd Black) by the Rule laid down in the foregoing Example; and ſet up the intended Heights AD and BC. Draw a Line from C, to D, with a Pencil, or the like; then draw the Perpendiculars BC, and E*l*, as far diſtant from each other as the Geometrical Thickneſs of the Wall; alſo F*i*, and G*g*, = HZ, and I*a*, = K*q*, and AD; draw the occult Lines

C*r*,=*l r*,=*i r*,=*g r*, =*z r*,=*a r*, =*q r*, and D*r*; then from S, raiſe a perpendicular Line to touch the Line *l r*, at *k*; alſo from R, to touch the Line *i r*, at *h*; from M, to touch the Line *a r*, at *b*; from L, to touch the Line *q r*, at *y*; from Q, to touch the Line *i r*, at *f*; from P, to touch the Line *g r*, at *e*; from O, to touch the Line *z r*, at *d*; from N, to touch the Line *a r*, at *c*; from X, to touch the Line *c r*, at *p*; from W, to touch the Line *l r*, at *o*; from U, to touch the Line *q r*, at *n*; and from T, to touch the Line D *r*, at *m*: then draw the Ink Lines *egcpm* DZ *dcbynokhfe*, which repreſents the Top of the Wall.

To draw the Steps, firſt draw their Plan between G*p*, and H*o*, then ſet up their intended Heights, 1 2 3 4 5 6, from G, on the Line G*g*, and draw occult Lines 1 *r* =2 *r*=3 *r* =4 *r* =5 *r*, and 6 *r*; then from the firſt Diviſion 1, draw the upper front Line of the firſt Step, parallel to the bottom Line GH; and from one end of the ſecond Line in the Plan, raiſe a Perpendicular to cut the Line 1 *r*, which gives the Perſpective Width of the firſt Step; from which, draw a Line parallel to GH, which is the bottom front Line of the ſecond Step: continue that Perpendicular Line to touch the Line 2 *r*; from which, draw the upper front Line of the ſecond Step, and ſo on. But for the better Explanation, ſee *Fig.* 51. where being leſs crouded with Lines, is laid down more plainly. Firſt, draw *y l*, (which repreſents G*g* in *Fig.* 52.) on which ſet the ſix Riſings of the Steps; and draw the occult Lines 1 *h* —2 *h*=3 *h*=4 *h*=5 *h* and 6*h*, then from 1 2 3 4 5 on the Plan, raiſe Perpendiculars, which give the Perſpective Height and

Fig. 54.

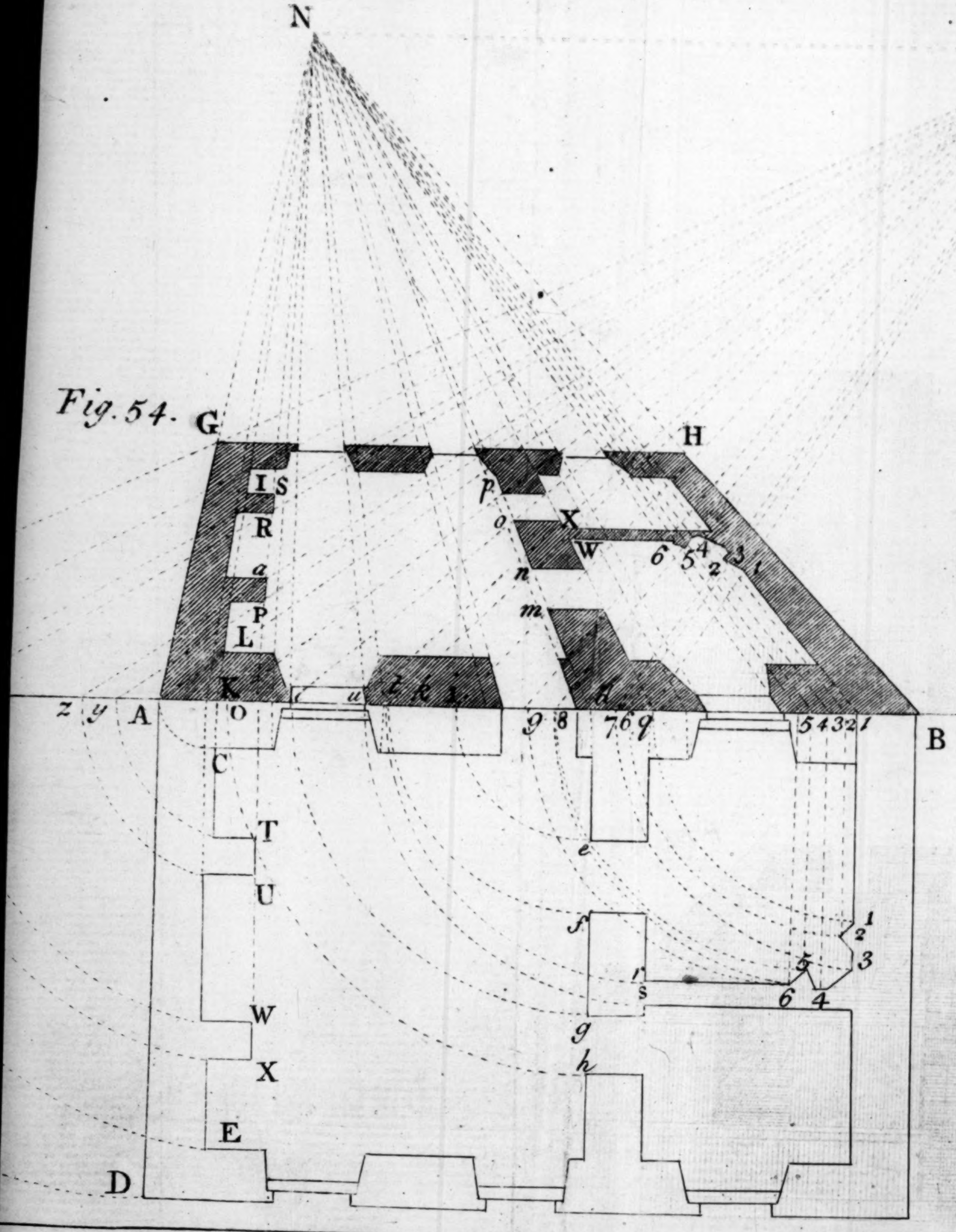


Fig. 55.

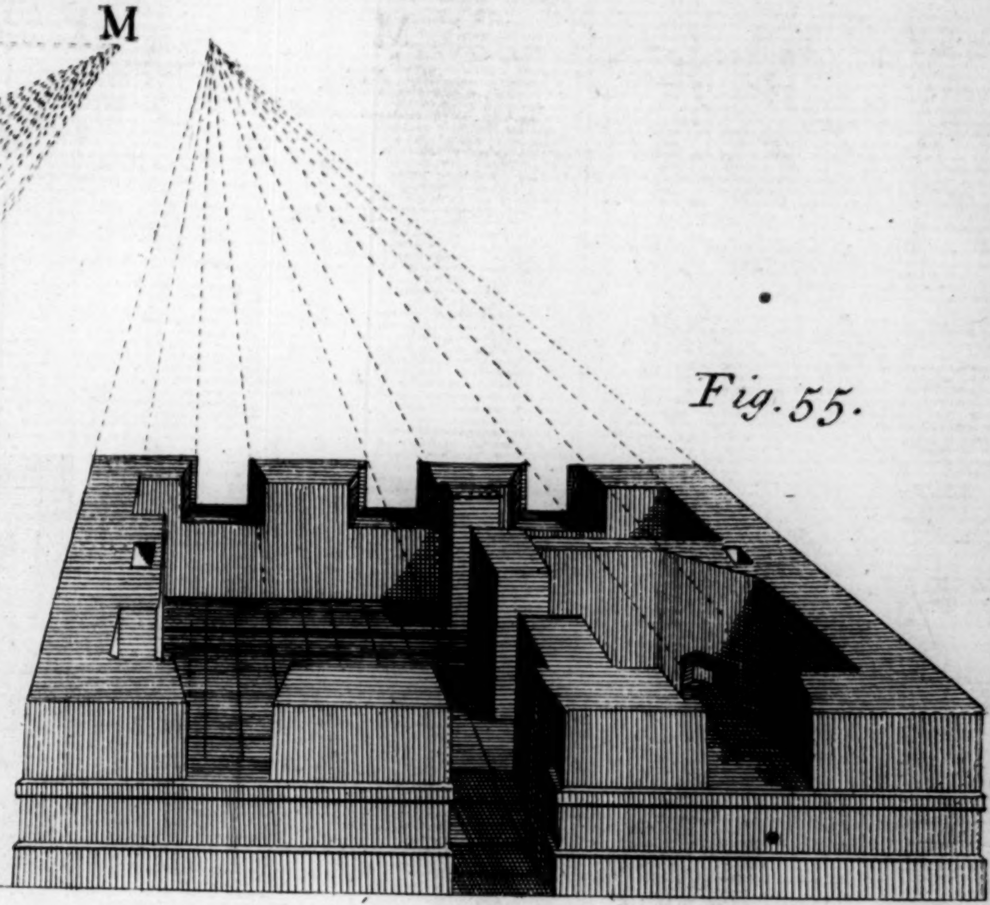
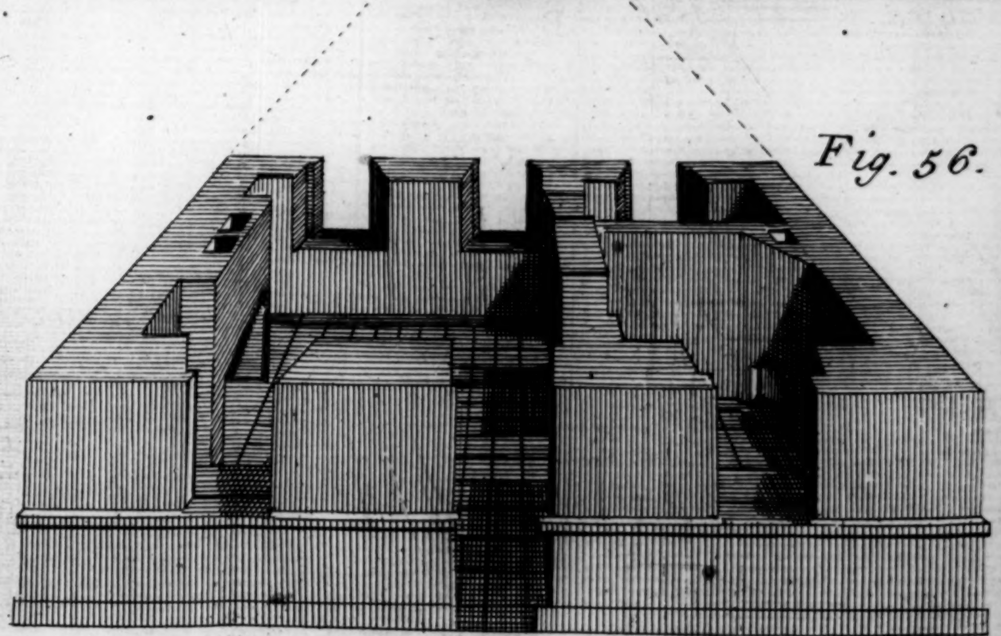


Fig. 56.



I. Mynde sc.

and Width of every Step; (obſerve this Example in all kinds of Steps.) The Steps being raiſed, I am to ſhew a Line for the Top of the Pavement, which muſt be level with the upper Step; (ſee *Fig.* 52.) Continue the upper front Line of the upper Step, to touch the Lines Q *f*, and N *c*, (which you ſee mark'd 13 = 14) then lay a Ruler on the Points *r*, and 14, and draw the Line 7 = 14; from 7, draw a Line to 8, parallel to the Baſe B G; on 8 and *r*, lay a Ruler, and draw the Line 8 = 9, draw the Line 9 — 10, parallel to the Baſe; then lay a Ruler on *r* 10, draw the Line 10 = 11, and the Line 11 = 12, parallel to the Baſe A H; then lay a Ruler on 12 *r*, draw the Line 12 = 13, then will the Lines 7 — 8 — 9 = 10 = 11 = 12 = 13 = 14, repreſent the upper Face of the Pavement. See *Fig.* 53. the finiſh'd Object.

PLATE XI.

To find the Perſpective Plan of a Building.

FIG. LIV. Draw the Geometrical Plan, then from the Jambs and Back of the Chimneys, the Splays of the Windows, and the middle Wall, draw Perpendiculars to touch the Line A B, from which, draw occult Lines to N; ſet A D towards F, draw the Line F M, which gives the Point G, from whence draw G H; ſet K E to C, draw C M, which cuts the Line N K at I, and gives the Thickneſs of the back Wall; take K C, ſet it to A, draw A M, which gives the Point L, for the Thickneſs of the front Wall to draw the Jambs of the Chimney; take O T, ſet it to Y, draw YM, and where it cuts the Line ON, as at P, draw a Line to the Wall; take OU, ſet it to Z, draw ZM, and where it cuts the Line NO, at *q*, draw a Line to the Wall. Take OW, ſet it to *a*, draw *a* M, which cuts the Line NO, at R, from which, draw a Line to the Wall; take OX, ſet it to *b*, draw *b* M, which cuts NO, at S, from which, draw a Line to the Wall, and the two Jambs are finiſh'd. To make the Door-ways; take *de*, ſet it to *c*; draw *c* M, which cuts N *d*, at *m*, draw the Jamb *m*; take *df*, ſet it to *k*, draw *k* M, which cuts N *d*, at *n*; draw the Jamb *n*, ſet *dg*, to *l*, draw *l* M, which cuts N *d*, at *o*, draw the Jamb *o*; take *dh*, ſet it to K, draw KM, which cuts N *d*, at *p*, draw the Jamb *p*. To draw the little Partition-Wall; ſet *qr*, to *t*; draw *t* M, which cuts N *q*, at *w*; from whence draw a Line towards the Angle-Chimney; ſet *qs*, to *u*, draw *u* M, which cuts N *q*, at *x*; from whence draw a Line to the Flank-Wall HB, and the Partition-Wall is finiſhed.

To draw the Angle-Chimney, ſet 1 — 1, to *q*; draw the Line *qm*, which gives the Point 1; on the Line 1 N; ſet 1=3, to 7, draw 7 M, which cuts 1 N at 3, make the Point 3; ſet 2 = 2, to 6; draw 6 M, which cuts 2 N at 2, make the Point 2; ſet 3 = 4, to 8, draw the Line 8 M, which cuts 3 N at 4, make the Point 4; ſet 4 — 5, to 8, and where 8 M; cuts 4 N, make the Point 5; ſet 5 — 6, to 9, draw 9 M, and where it cuts 5 N, make the Point 6. The Points 1 2 3 4 5 6 being given, draw the Chimney, and the Plan is finiſh'd.

N. B. Figs. 55, and 56, are in all reſpects drawn by the Rule laid down in *Fig.* 52.

Plate 12.

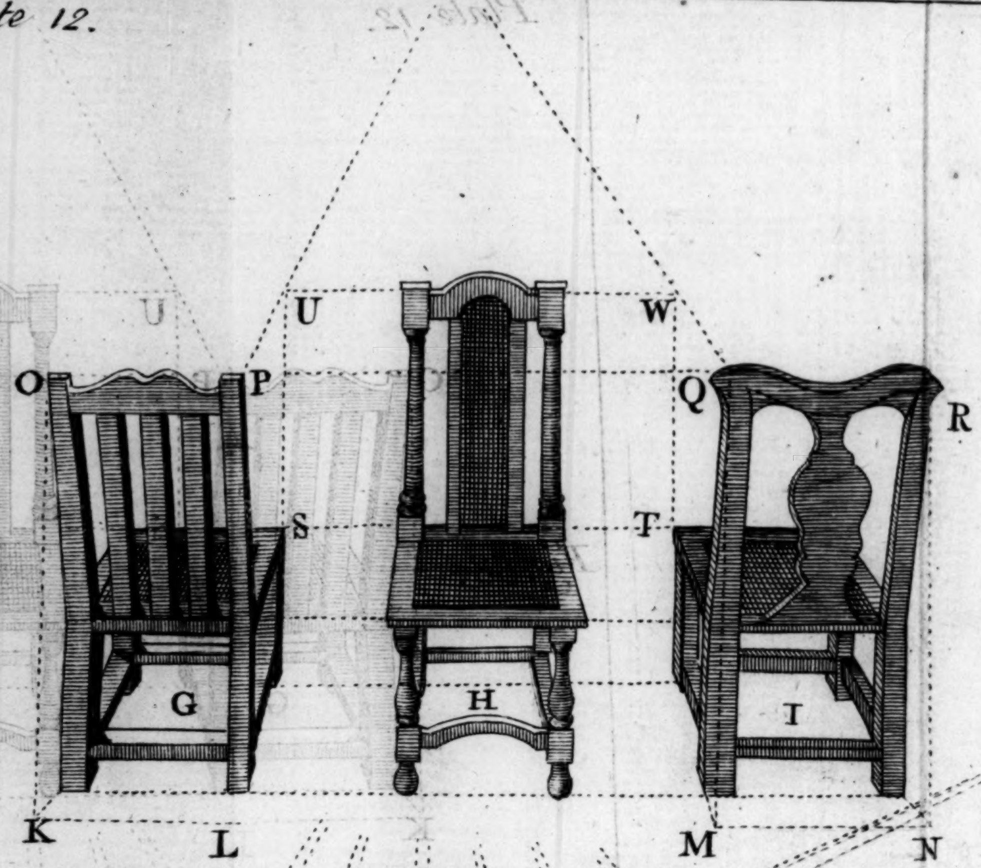


Fig. 58.

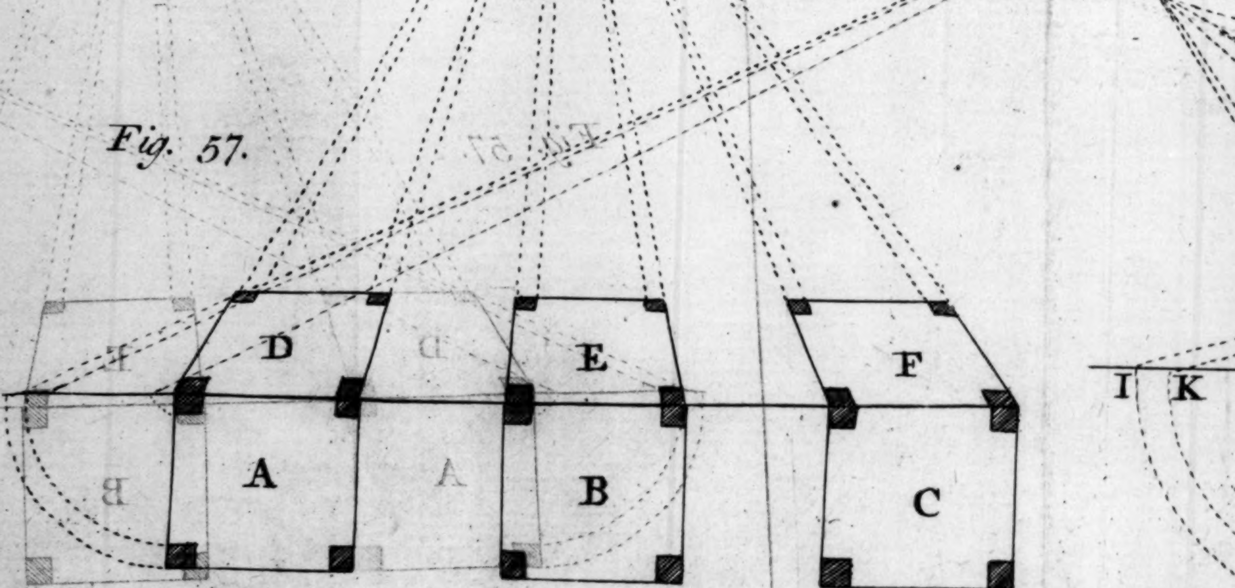


Fig. 57.

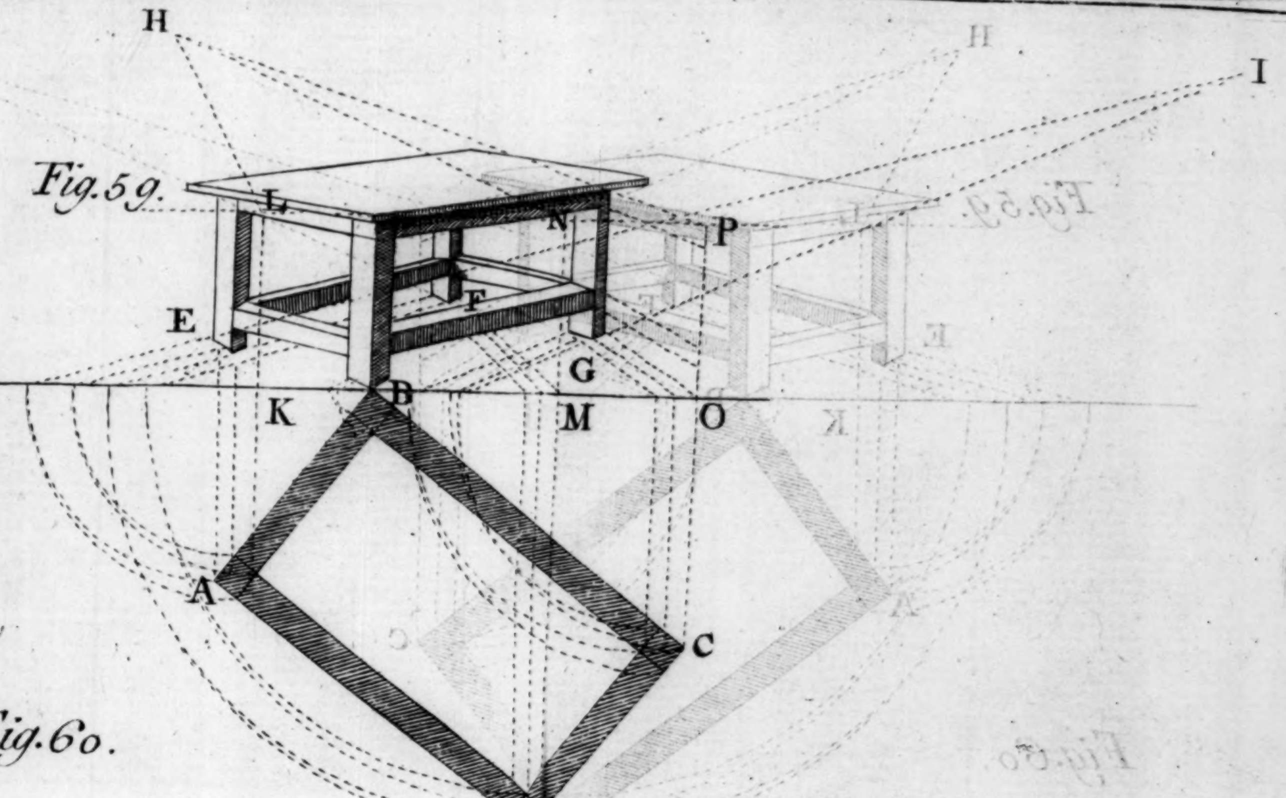


Fig. 59.

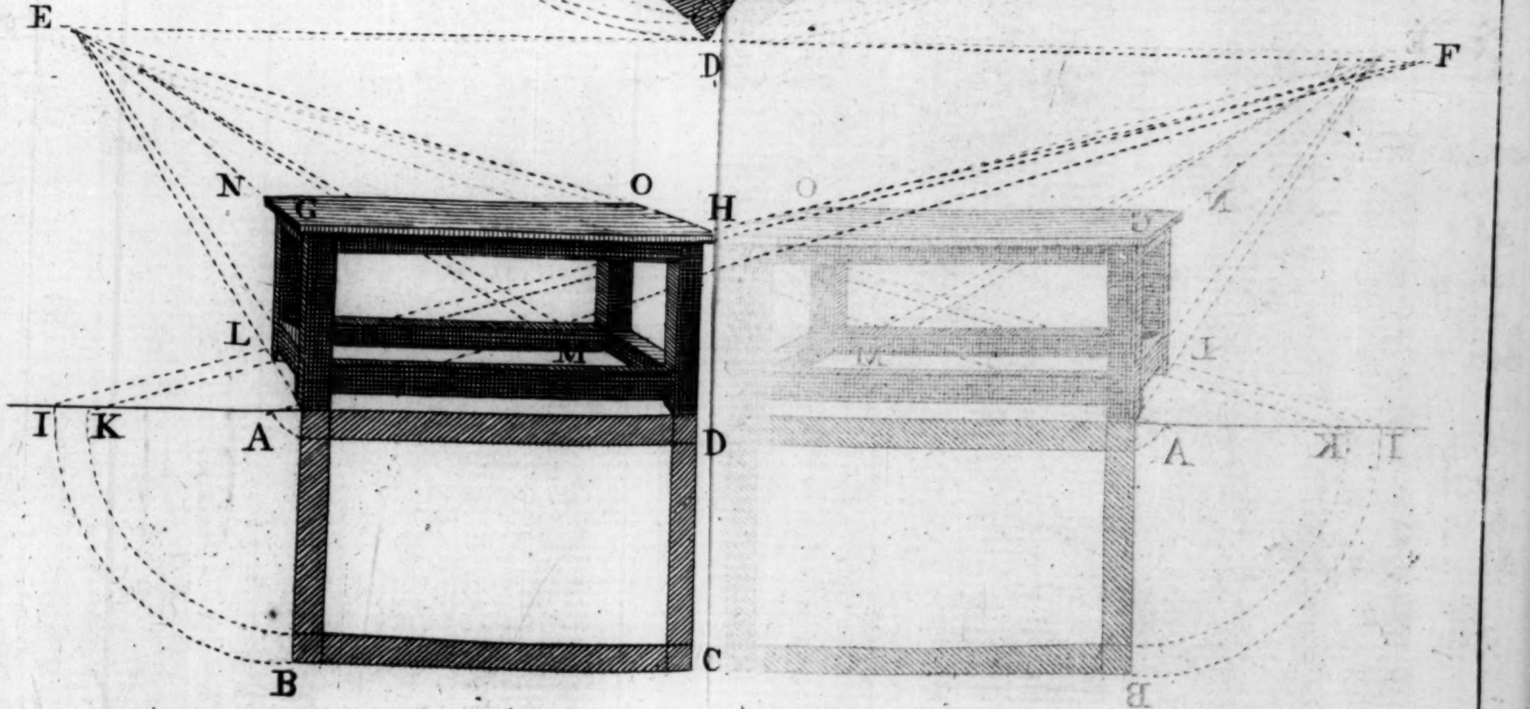


Fig. 60.

PLATE XII.

FIG. LVII. is the Geometrical and Perſpective Plans of three different Chairs; draw the Geometrical Plans ABC, from whence the Perſpective Plans DEF are found, by the Lines laid down in the foregoing Example, whereon the Chairs GHI are elevated.

TO elevate the Chairs, *Fig.* LVIII. raiſe the Seats Perpendicular from the Plan, then draw the Lines KL, and MN, ſo much behind the Chair, as you intend its Back ſhall lean; from whence, raiſe Perpendiculars to OP, and QR, the Top of the Chairs; from which, draw the Backs, as in the Example. To draw the Back of the Chair H, of an equal Height, with the Chairs G, and I, draw the Line ST, alſo Lines from P and Q, to the Point of Sight; from S and T, raiſe Perpendiculars to touch the occult Lines drawn from P and Q, at U, and W; draw the Line U, and W, which is the Perſpective Height of the Chair H, level with the Chairs G and I.

To draw the Perſpective Plan and Elevation of a Table at an Angle View.

FIG. LIX. Draw ABCD, the Geometrical Plan, from whoſe Points, raiſe Perpendiculars to the Baſe Line; from whence, draw occult Lines to the Point of Sight H; take OC, ſtrike a ſweep towards B; from B, draw a Line to I, and where it cuts the occult Line OH, is one of the Points for the Foot G: and ſo of the other Lines and Points. To elevate the Table from KM and O, raiſe Perpendiculars to LN and P; from whence, draw occult Lines to the Point of Sight; then from EFG, raiſe the Legs Perpendicular, till they touch the occult Lines LH, = NH, and PH, which is the Perſpective Height of the Table. To find the Rails of the Frame; firſt, mark them on the Leg B, then on the Lines KL, = MN, and OP; from whence, draw Lines to the Point of Sight, and where they cut the Legs, draw the Frame for Example. See the Line OP.

To draw a Table at an oblique View.

FIG. LX. Draw the Geometrical Plan ABCD; from A and D, draw occult Lines to E, then from A, ſtrike three ſweeps to IK, *&c.* from whence, draw Lines to the Point of Diſtance F; and where they cut the occult Lines AE, and DE, are the Plans for the Feet of the Table, from whence it's to be elevated. From A and D, ſet up the Height of the Table to G and H; from whence, draw Lines to the Point of Sight, then raiſe the back Legs L and M, to the Lines HE, and GE; draw the Line NO, and the Work is finiſh'd.

Plate 13.

Fig. 62.

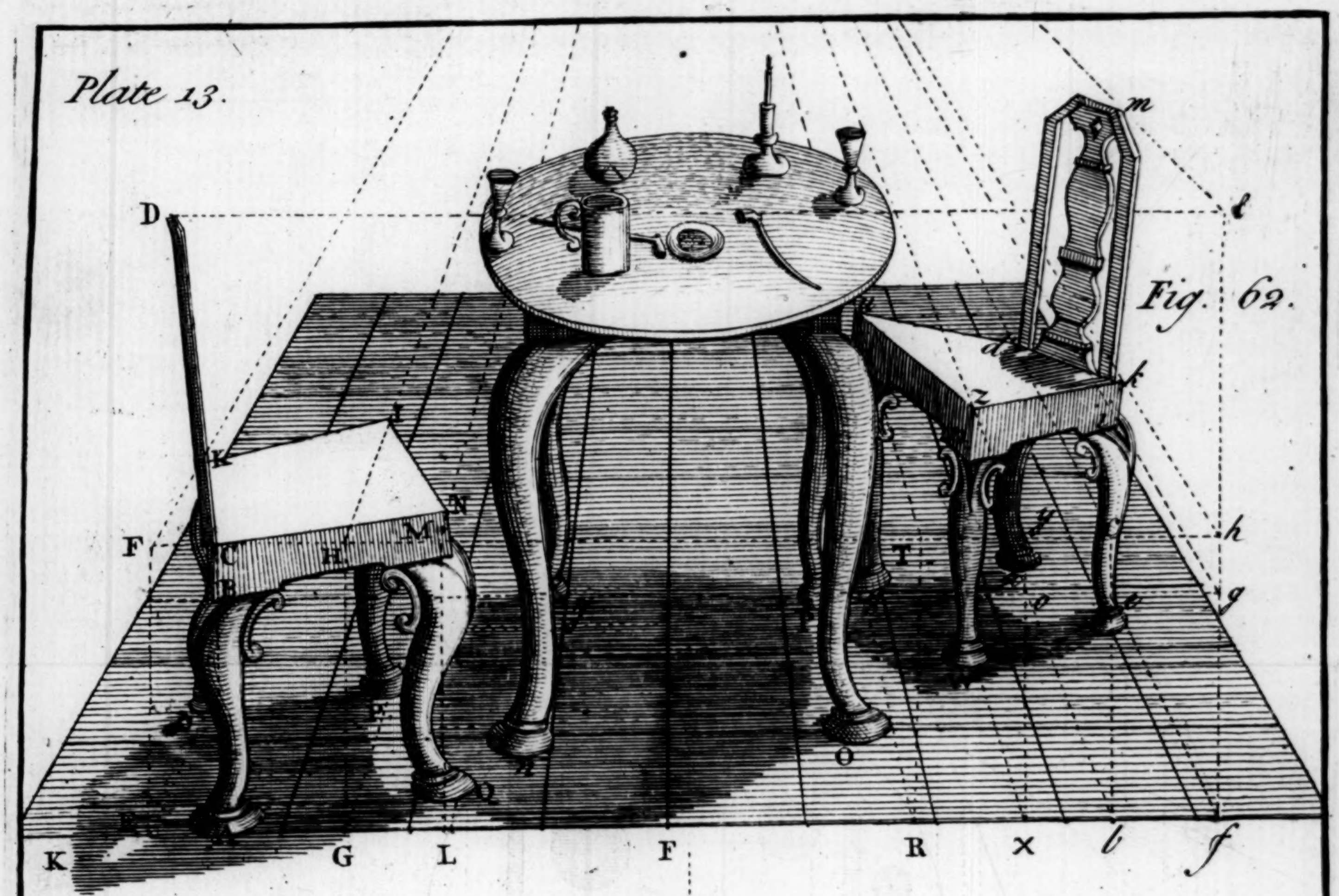


Fig. 61.

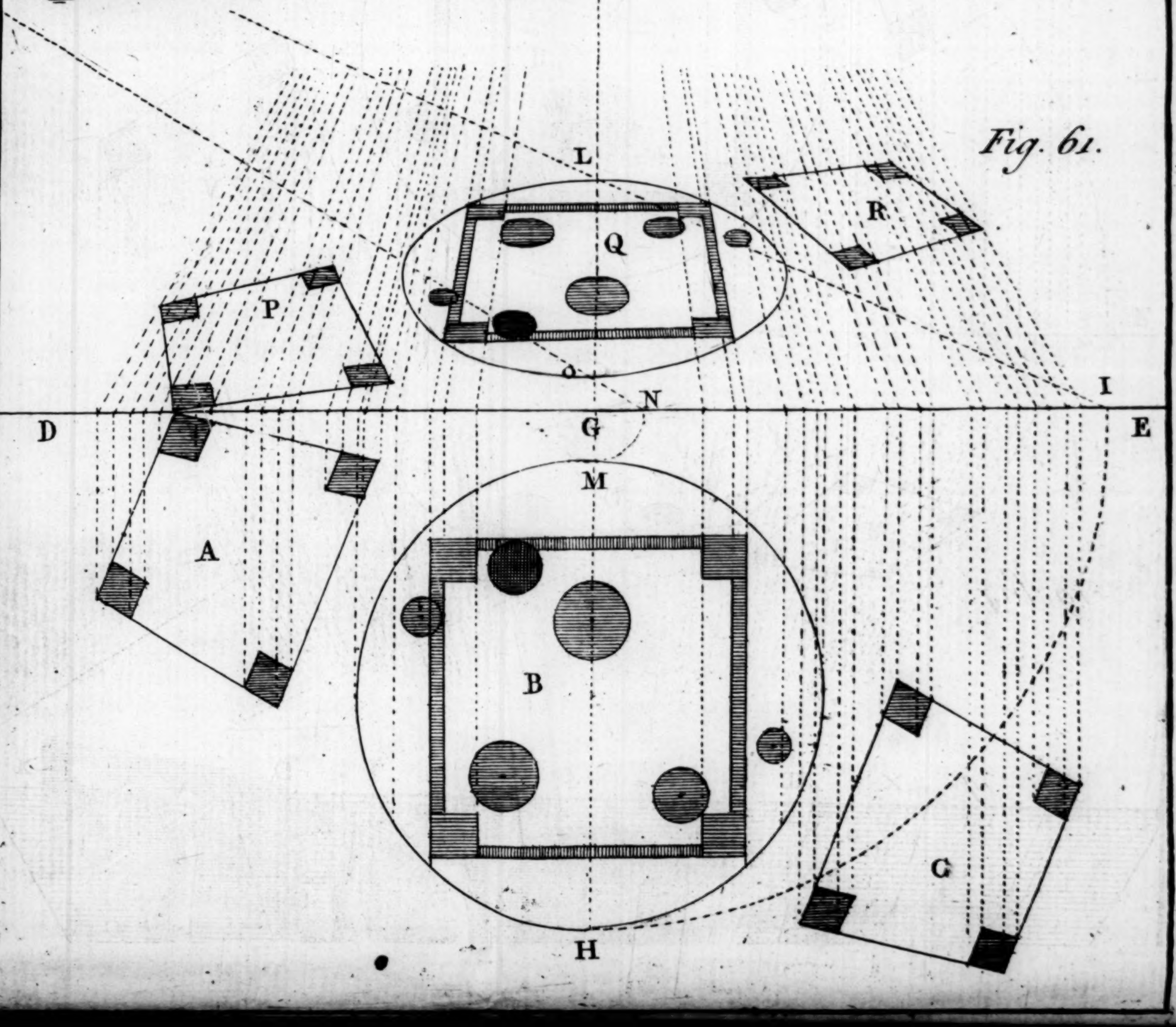


PLATE XIII.

To draw the Perſpective Plan of a round Table and Chairs.

FIG. LXI. Draw the Geometrical Plan ABC, from whoſe Points raiſe Perpendicular Lines to the Line ED; then from the Point of Sight, draw occult Lines to meet thoſe Perpendicular Lines, on the Line ED; (as the dotted Lines in the Example.) Then take GH, and ſet it to I; draw the Line of Diſtance IK, and where it cuts the Line FG, make the Point L; ſet GM to N, draw the Line of Diſtance NK, and where it cuts the Line FG, make the Point O; then will OL be the Perſpective Width of HM, and ſo the other Points of the Perſpective Plans muſt be found.

N. B. The little Circles are the Plans for the Bottle-Glaſſes, *&c.*

To draw the Perſpective Elevation of Tables and Chairs.

FIG. LXII. Firſt draw the Plans of the Feet A O P Q = A *qop* = S W *ae*, equal with the Plans PQR, *Fig. 61*. Then ſet up the Height of the Chair, as ABCD; from C, and B, draw level Lines to *h* and *g*, alſo from D to C; then from O P and Q, draw Lines to L G, and E, in a right Line, from the Point of Sight; alſo from SW*ae*, to RX*b* and *f*; from *f*, raiſe a Perpendicular to *l*, equal to AD; then from E G L R X*bf*, raiſe Perpendiculars to F H M T *ych*, which is the Geometrical Height of the Seats of the Chairs; and from F H M T Y C *h*, draw Lines to the Point of Sight. Then raiſe Perpendiculars from *o*, to cut the occult Line F, as at K; from *p*, to cut the occult Line H, as at I; and from Q, to cut the occult Line M, as at N; then is N I K C the Perſpective Seat of the Chair. Again, raiſe a Perpendicular from S, to touch the occult Line T, at U; from *a*, to touch the occult Line *c*, at *d*; from *e*, to touch the occult Line *h*, at *k*; and from W, to touch the occult Line Y, at Z: then is Z *k d u* the Perſpective Seat of the other Chair, and the Width of the Frame *i k* is found, by drawing a Line from *g*, to the Point of Sight; ſo is N Z, by drawing a Line from O, to the Point of Sight, and ſo of the others.

N. B. You muſt firſt elevate both Chairs and Table ſquare, as thoſe in the foregoing Plate, with a Pencil, or the like; then turn them to what Faſhion you pleaſe.

PLATE XIV.

To draw the Perſpective Plan and Elevation of a half-headed Bedſtead.

F*IG.* LXIII. Firſt draw the Geometrical Plan A B C D, then by the foregoing Rules, find the Perſpective Plan E F G H, on which elevate the four Poſts; then draw the Front-Rail, and continue its Width by dotted Lines, to I K L and M; from which, draw the Sides towards the Point of Sight *a*.

Plate 14.

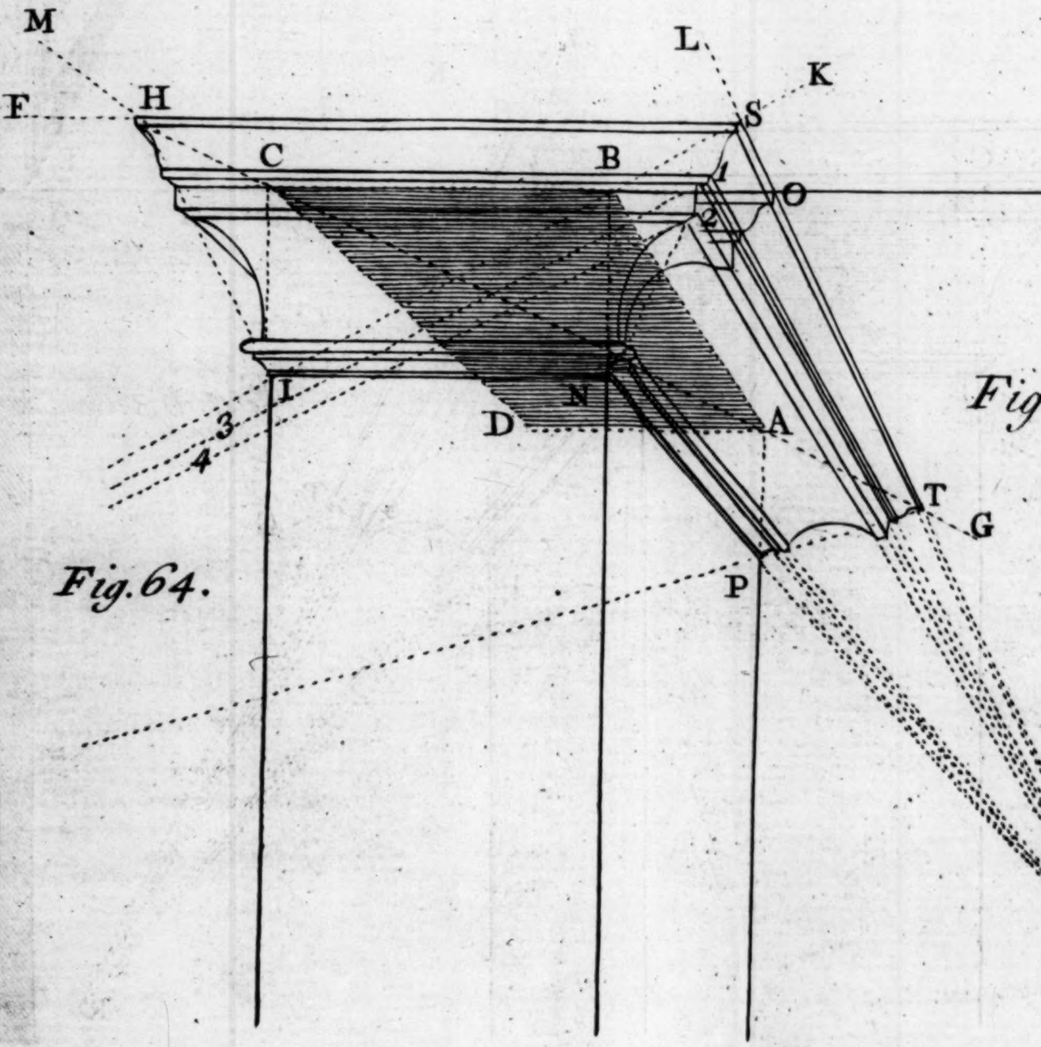


Fig. 64.

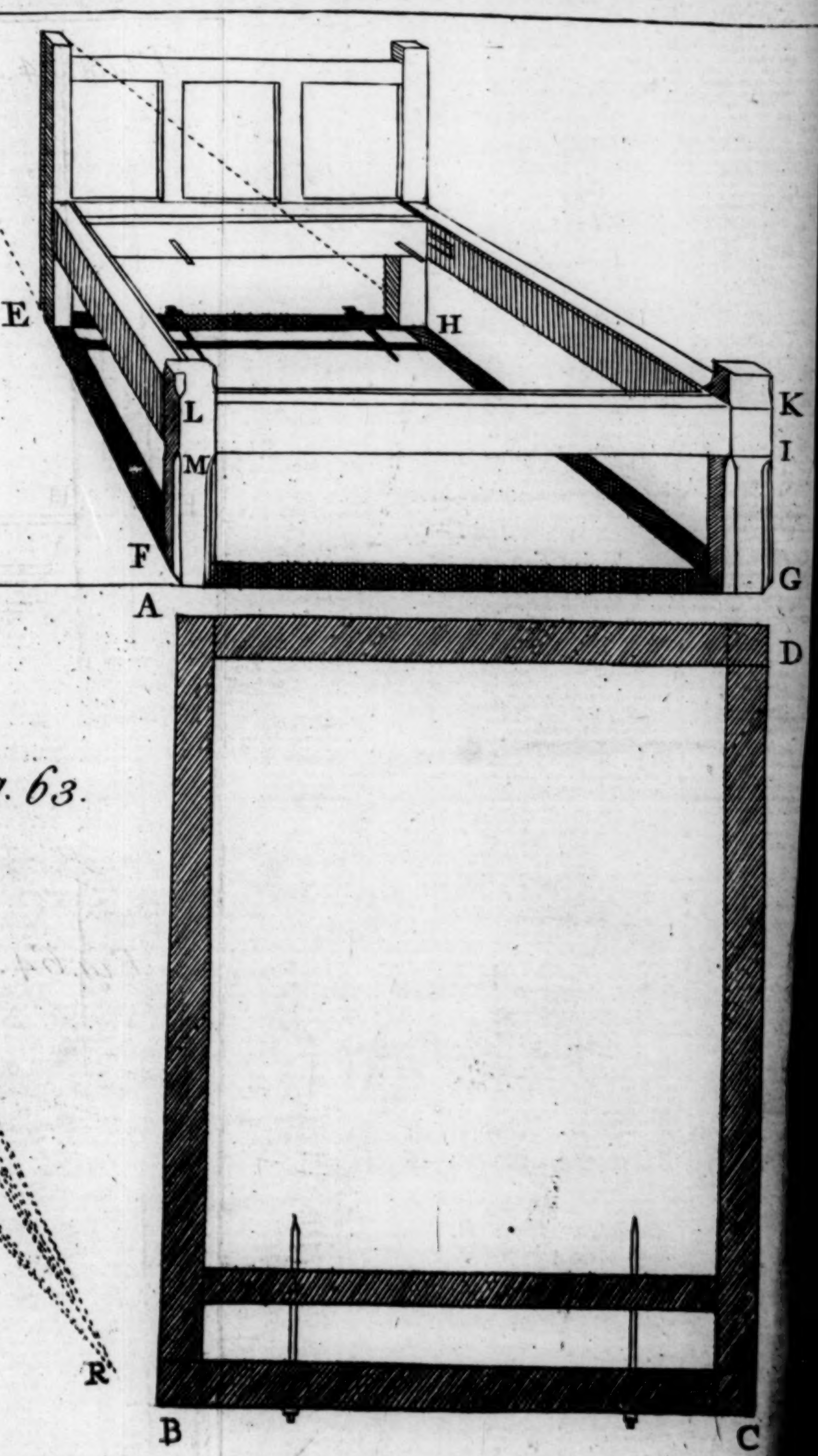


Fig. 63.

To find the Perſpective of a Cove-Corniſh.

FIG. LXIV. Firſt draw a Perſpective equal-ſided ſquare Plan, as ABCD; then draw the Geometrical Corniſh NBO: fix your Point of Sight R, and Point of Diſtance; from R draw a Line through the Point O, at pleaſure, towards L; then from the Point of Diſtance, draw a Line at pleaſure, as to K; and where thoſe two Lines, K and L, cut each other, as at S, is the Perſpective Height and Projection of the Corniſh. From S, draw a Line to N; then from R, draw occult Lines through every Point of the Projection of the Geometrical Corniſh ON, to touch the Line SN; draw a level Line from S, at pleaſure, towards F; then through the Points of the Perſpective Plan A and C, draw a Line at pleaſure to G and M; and where it cuts the Line SF, as at H, is the Projection of the Corniſh; from which, draw the Line HI. Then from the Diviſions, on the Line NS, created by the occult Lines, draw Lines to touch the Line IH, parallel to the Line SF, which ſhews the Perſpective Riſe of every Member. Then, from where the Line GM cuts the Line RS, at T, draw a Line to the Point of Diſtance, and PT will be the other Projection: and obſerve by the Example, that all the Squares and Faſcias muſt fall Perpendicular from the Lines IH = NS, and PT. Again, obſerve that the Mitering of the under ſide of every Square, and the Faſcia on the Line IH, muſt be drawn from the Point of Sight; and thoſe on the Lines PT, and NS, muſt be drawn from the Point of Diſtance; as you may ſee by the Lines

1—3 and 2—4, in the Example; and ſo of any Corniſh.

N. B. This Corniſh is inſerted here, for the better Inſtructions in drawing the next Plate.

PLATE XV.

To draw the Perſpective Elevation of a Bedſtead and Teſter.

FIG. LXV. Firſt find the Perſpective Plans of the Feet and Teſter; then from H and G, ſet up to the under ſide of the Teſter, K and N; draw the Line KN, alſo the occult Lines KA, and NA; from I, raiſe a Perpendicular to cut the Line AK, at L; from F, raiſe a Perpendicular to cut the Line AK, at M; draw the Line LM, then draw the bottom Frame of the Teſter; from B and E, raiſe the Head-poſts to the Frame L and M, alſo draw the Foot-poſts and Rails, as in *Fig.63*. then draw the Geometrical Corniſh SPT; from A, draw a Line through the Point T, to X; alſo from the Point of Diſtance, through P, to Y; and where the two Lines X and Y, cut each other, as in Z, is the Perſpective Height and Projection of the Corniſh. From Z, draw a Line to S, alſo a level Line towards W at pleaſure; then from PQ, make a Perſpective ſquare Plan, whoſe Sides are equal; draw the Line O and Q at pleaſure, both ways; and where it cuts the level Line drawn from Z, as at W, draw the Line *a* W, which cuts the occult Line AT, as at U; from whence, draw a Line to the Point of Diſtance: then is MU the Projection.

Plate. 15.

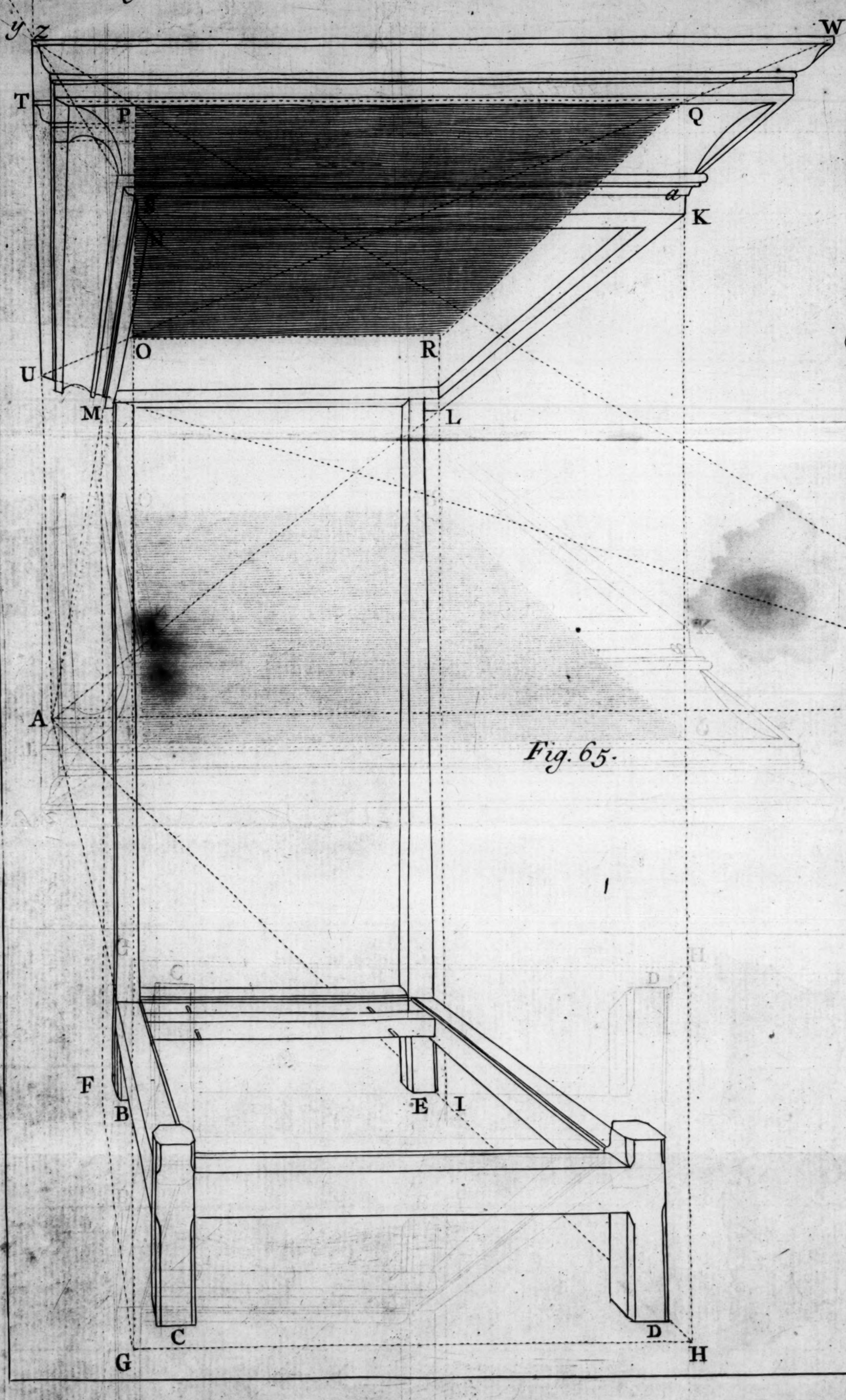


Fig. 65.

Plate. 16

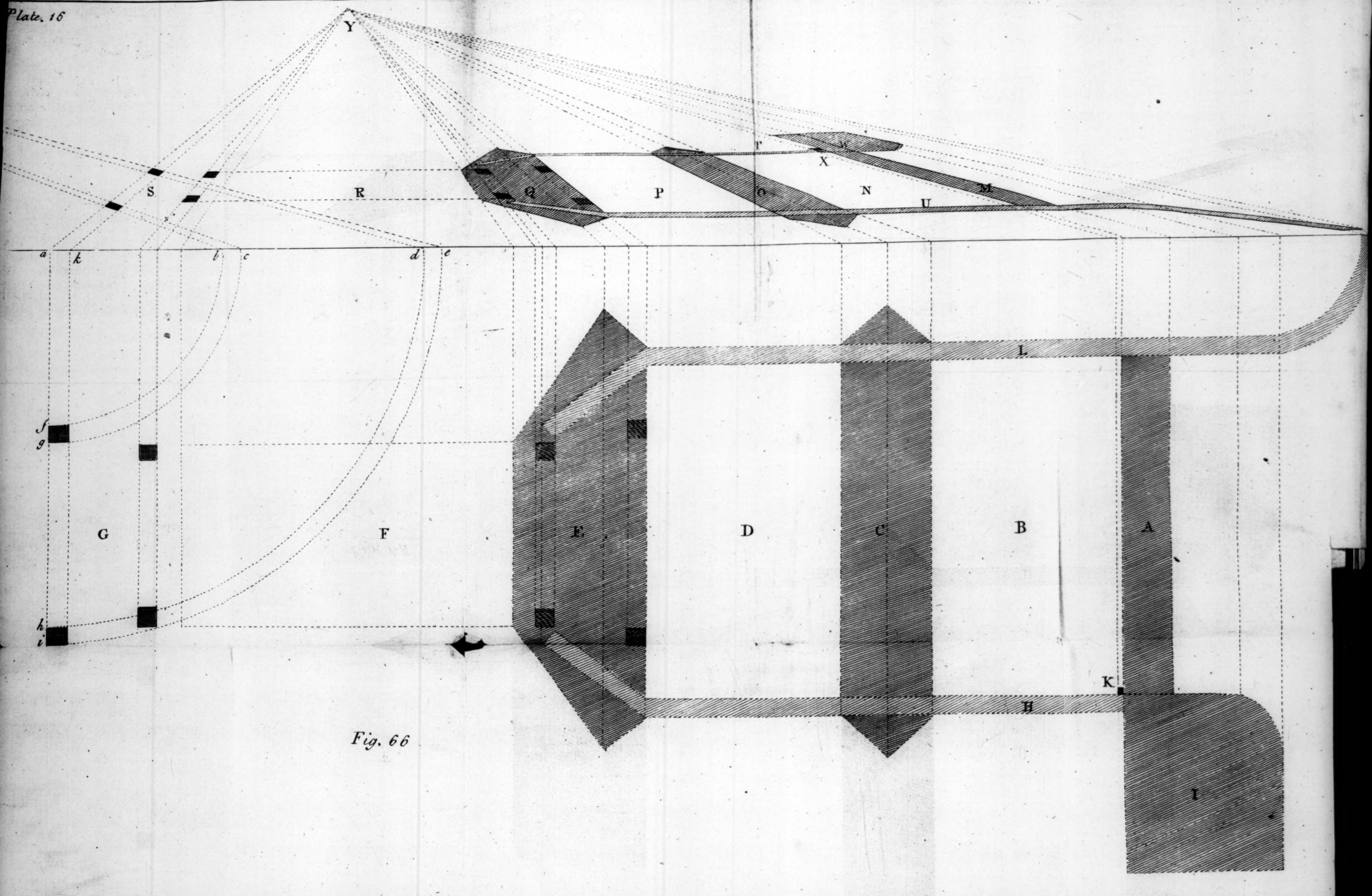


Fig. 66

jection. The Perſpective Height of each Member can't be found by drawing Lines from the Point of Sight, as was done in *Fig. 63.* becauſe the Point of Sight is within the Projection of the Corniſh; but you muſt draw Lines from the Point of Diſtance, through the Diviſions, on the Line S P, to cut the Line S Z; from whence, draw the Lines of the Corniſh, to touch the Line *a* W; then draw the Members of the Corniſh, from Z S, to M U, in a Line with the Point of Sight, as in the Example.

N. B. That Black part is not inſerted for any Shadow, but only to diſtinguiſh the Perſpective Square from the other Work.

PLATE XVI.

F*IG. 66.* is the Geometrical and Perſpective Plans of the Draw-Bridge, at the Key of *Briſtol.*

Firſt, draw the Geometrical Plan, *viz.* A, the Butment next the Key; B, an Arch; C, a Pillar; D, an Arch; E, a Pillar, with four Poſts of the Bridge; F, the Paſſage for the Veſſels to paſs through, over which the Draw-Bridge is built; G, part of *St. Auguſtin*'s Back, whereon four of the main Poſts are framed; H, a Wall on each ſide the Bridge; I, a Watch-houſe; *k*, the Plan of the Poſt on which the Bell is hung. From every Point in the Plan, raiſe Perpendiculars to the Baſe Line; fix the Point of Sight *y*, alſo the Point of Diſtance; draw the occult Lines *ya*=*yk*, *&c.* Take *af*, and ſet it to *b*; alſo *ag*, to *c*,=*ah*, to *d*, and *ai*, to *e*. Then from *bcde*, draw Lines to the Point of Diſtance; and where they cut the occult Line *ay*, gives the Perſpective Plans of the two firſt Poſts; and ſo of the other Work. And, obſerve, that M is the Perſpective of A = N, of B = O, of C = P, of D = Q, of E = R, of F = S, of G = U, of H = T, of L = X, of K, and W, of I; on which you are to elevate *Fig.* 67.

PLATE XVII.

FIG. LXVII. is the Elevation of the Draw-Bridge on the Key of *Briſtol*, drawn from the Point of Sight A, which is equal to the Point of Sight Y, in the foregoing Plan.

PLATE XVIII.

FIG. LXVIII. repreſents the Geometrical and Perſpective Plans of a Stone-Quarry, with a Crane-houſe, and Crane, to raiſe the Stones belonging to Mr. *Allen*'s Stone-Works, near the City of *Bath*.

To find its Perſpective Plan; firſt, draw the Geometrical Plan of the Houſe A B C D, alſo the Poſts and Beam E M F G, and the Crane-Beam G N, with the Plan of the Quarry OPQR, alſo the Capſton-Bars I K L H; from whoſe Points, raiſe Perpendicular Lines to the Baſe Line, as by the dotted Lines in the Example; fix the Points of Sight, and Diſtance O, and Z. From O, draw occult Lines to touch thoſe Lines drawn to the Baſe Line; then take 5; 6, and ſet it to *w*; draw the Line *wz*, and where it cuts the Line *o* 5, as

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Plate 17.

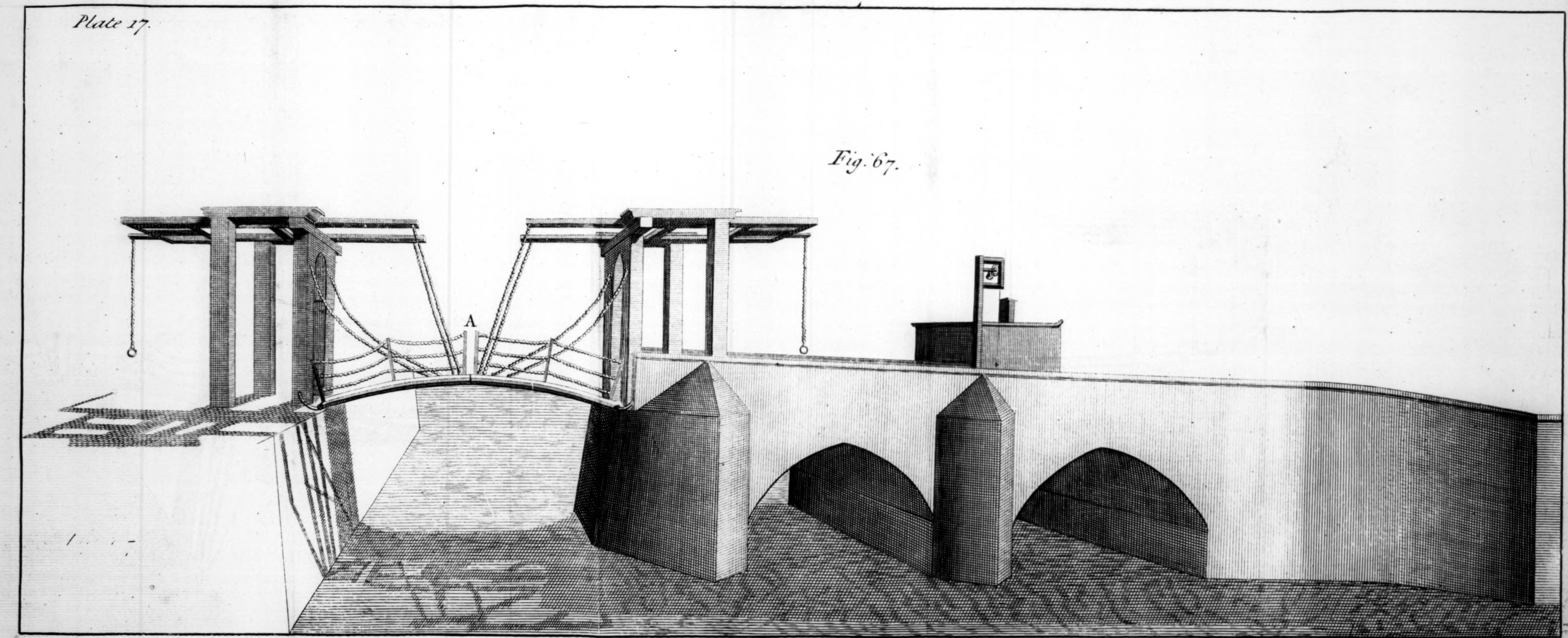


Fig. 67.

I. Mynde sc.

Pla. 18

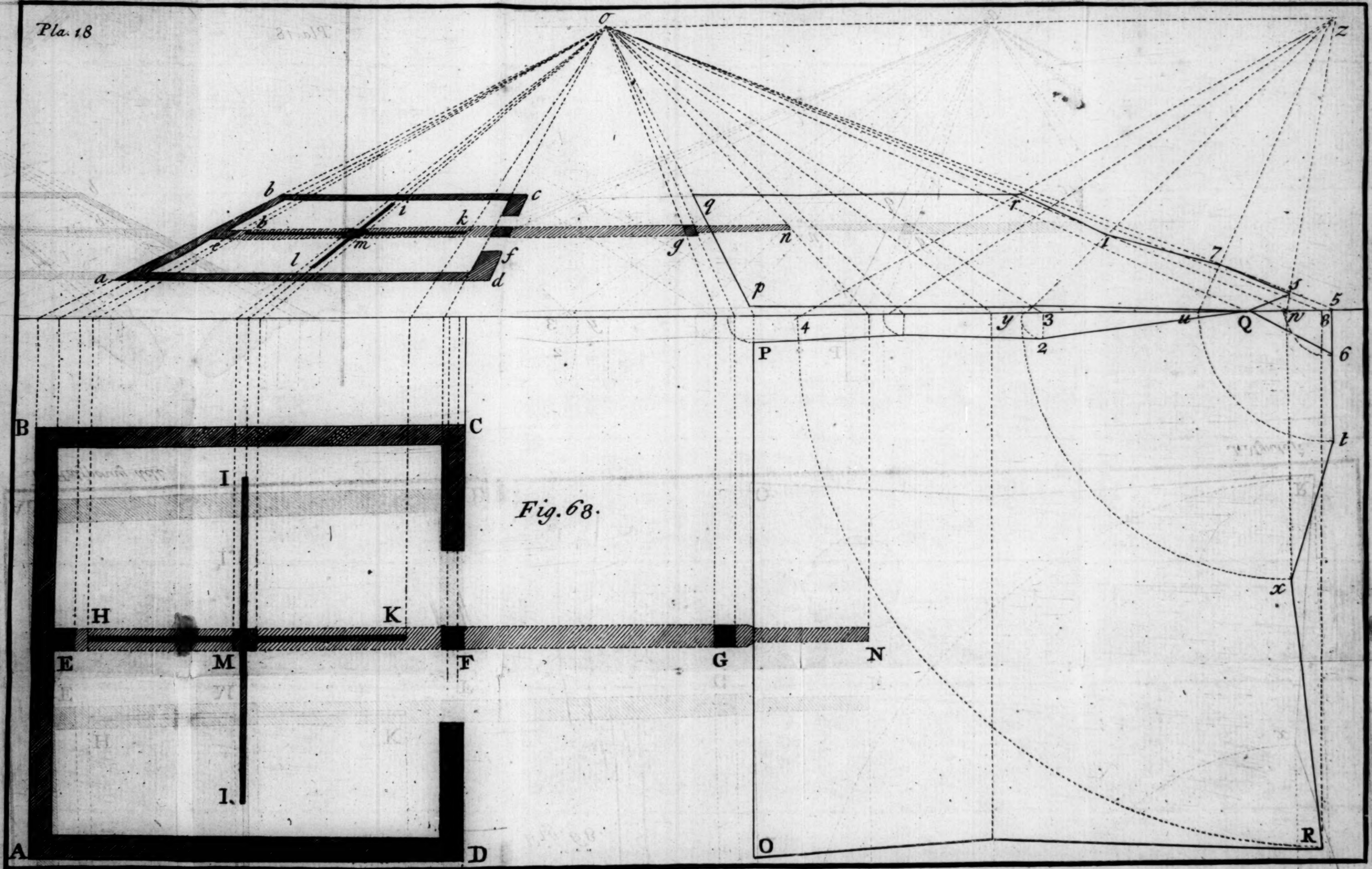


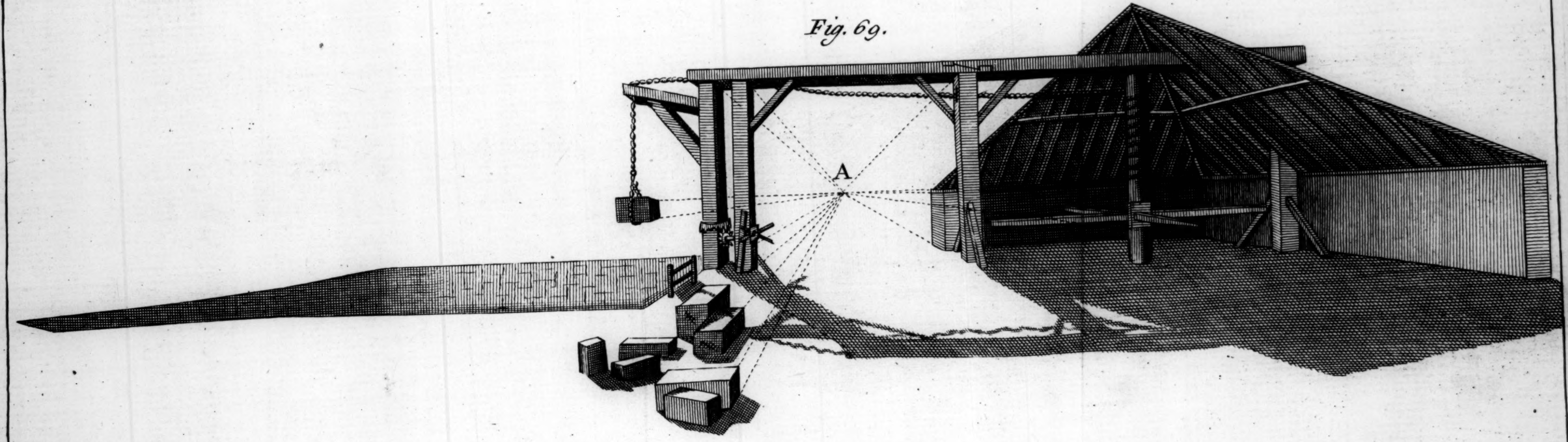
Fig. 68.

W Halfpenny deli

J. Mynde sc.

Pla. 19.

Fig. 69.



W. Halfpenny deli.

I. Mynde sc.

Fig. 71.

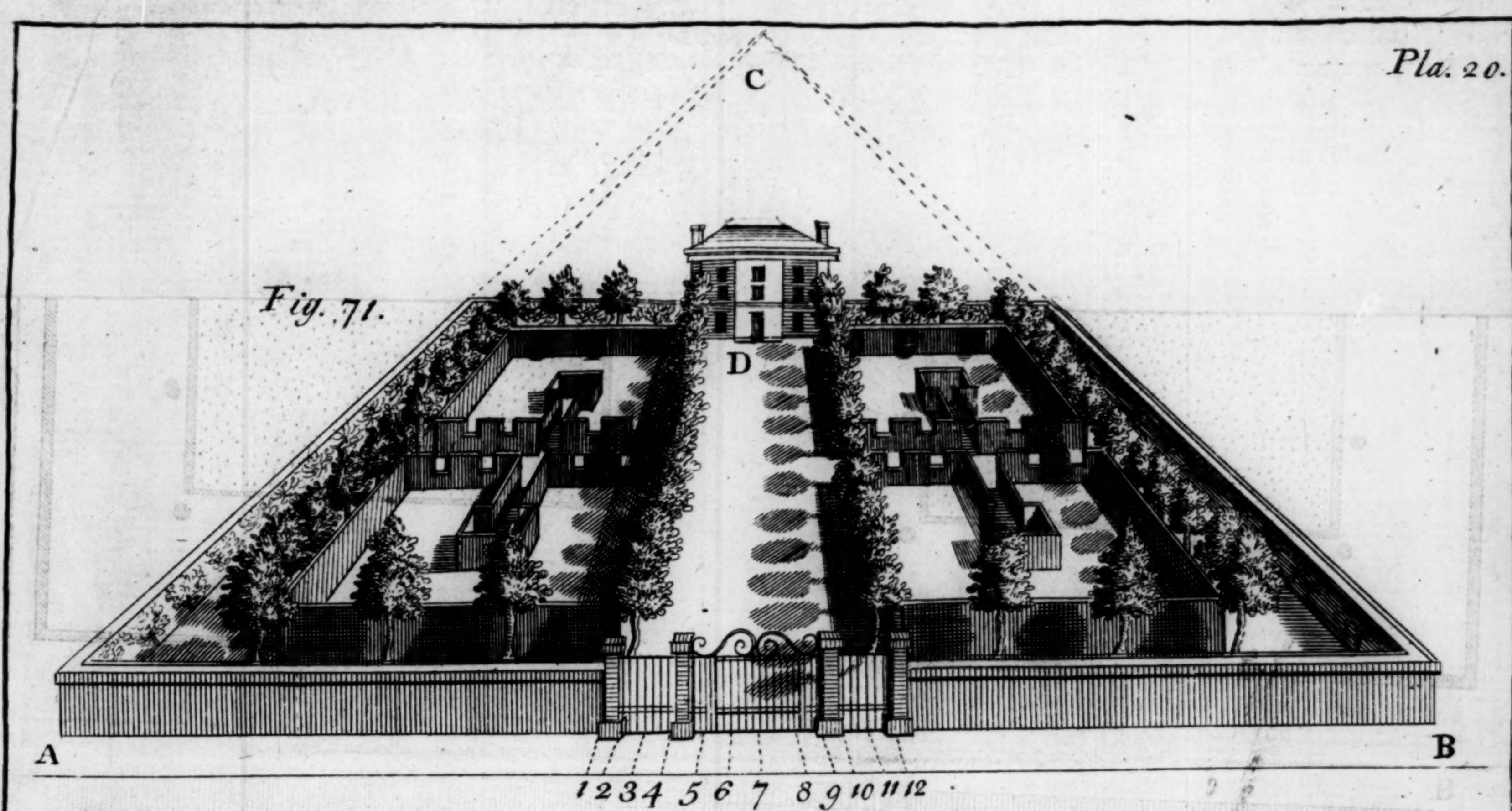
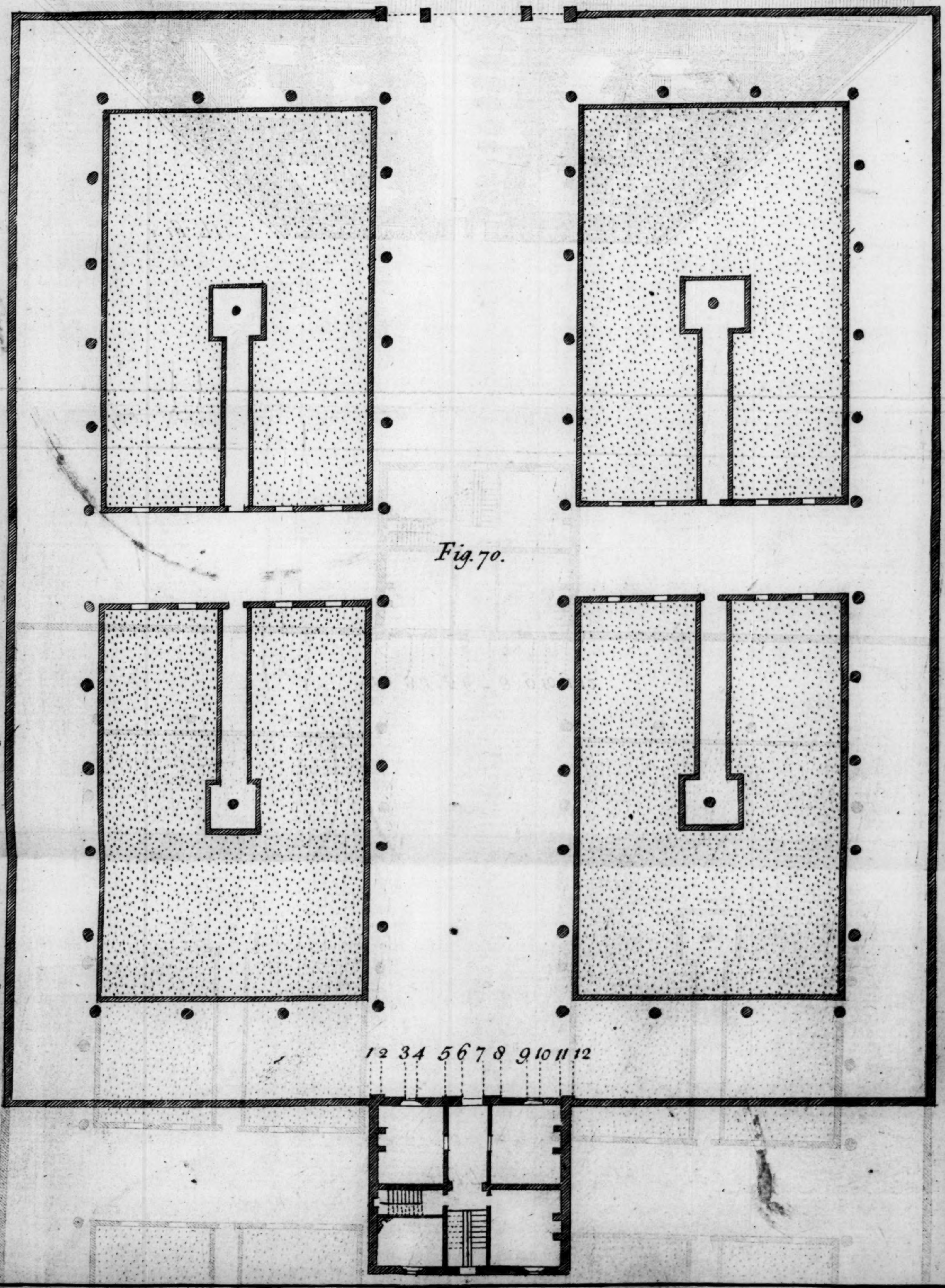


Fig. 70.



at S, make the Point S. Set 5 *t*, to *u*, draw the Line *u z*, and where it cuts the Line *o* 5, as at 7, draw the Line S 7; ſet *w x*, to *y*, draw the Line *y z*, and where it cuts the Line *o w*, as at 1, draw the Line 7 : 1; then ſet 8 R, to 4, draw the Line 4 *z*, and where it cuts the Line *o* 8, as at *r*, draw the Line 1 *r*; and ſo on, as in the foregoing Examples.

PLATE XIX.

F*IG*. LXIX. is the Perſpective Elevation of *Fig*. 68. whoſe Point of Sight is A, and its Parts are drawn by the Rule laid down in the foregoing Examples.

PLATE XX.

F*IG*. LXX. is the Geometrical Plan of a Houſe and Garden. To find its Perſpective Plan and Elevation, as *Fig*. LXXI. raiſe Perpendicular Lines from every Point of the Geometrical Plan, to the Baſe Line AB, and draw the Perſpective Plan in every reſpect, as in the foregoing Examples. And, obſerve, that 1—2—3—4—5—*6*—7—8—*9*—10—11—12 on the Line A B, is equal to the ſame Figures on the Geometrical Plan of the Houſe; from whence, draw Lines to the Point of Sight C, which gives the Widths of the Jambs, Door, and Windows, in the Houſe D. When the Perſpective Plan is found, you are to elevate the Walls, Trees, and Hedges, by the foregoing Examples.

PLATE

PLATE XXI.

F*IG*. LXXII. is the Geometrical Plan of a Houſe, and Garden, incompaſs'd by the Wall M; its ſeveral Parts are as follow; *viz.* A, the Houſe; B, a Plat of Graſs, with a Slope, and three eaſy Deſcents, leading to the lower part of the Garden; C, Walks; D, a Baſon of Water; E, a Green-Houſe; F, an Orangery, incompaſs'd by an Eſpalier-Hedge; G, a Circle, from whoſe Center is a View of four Statues, elevated on Pedeſtals, in the Squares N. In each of the Circles O, is planted a Mulberry-Tree, with a Seat round them; H, a Bowling-Green; I, a Mount, or Amphitheatre, on which is a Summer-Houſe, or Temple; K, Hexagons, in which are elevated on Pedeſtals, Statues, the Lines that incloſe the Walks and Quarters, are Hedges of Yeugh, *&c.* and the Lines of large Dots are Trees.

TO draw the Perſpective Plan, *Fig.* LXXIII. Draw the Baſe Line L L; to which, raiſe Perpendicular Lines from every Point of the Geometrical Plan, as in all the foregoing Examples. But obſerve to finiſh one Quarter firſt, then rub out the Perpendicular and occult Lines uſed in the finiſh'd Quarter, and draw new ones from the next Quarter, to the Line L L, and ſo on; otherwiſe you'll confuſe yourſelf with a multitude of Lines. Obſerve this Rule in all large Plans.

FINIS.

BRITISH MUSEUM
25 JUN 54

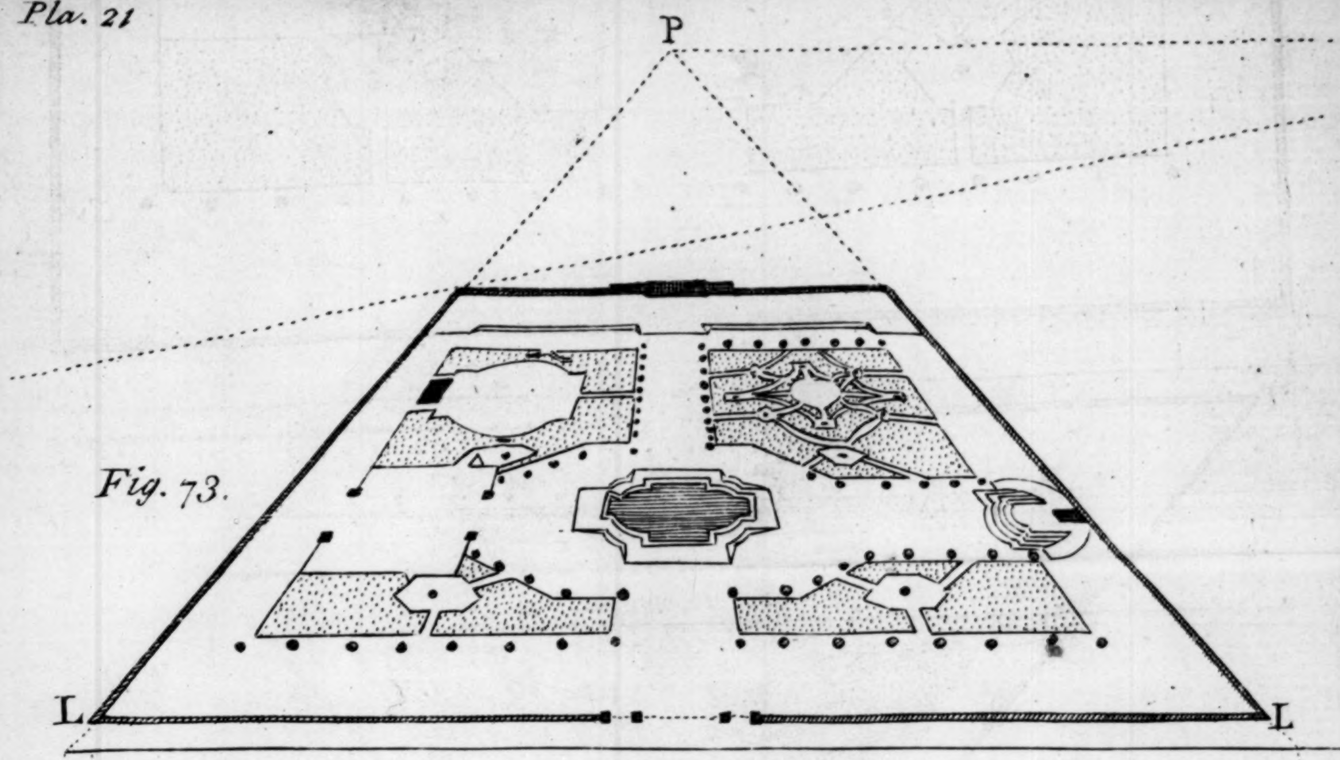


Fig. 73.

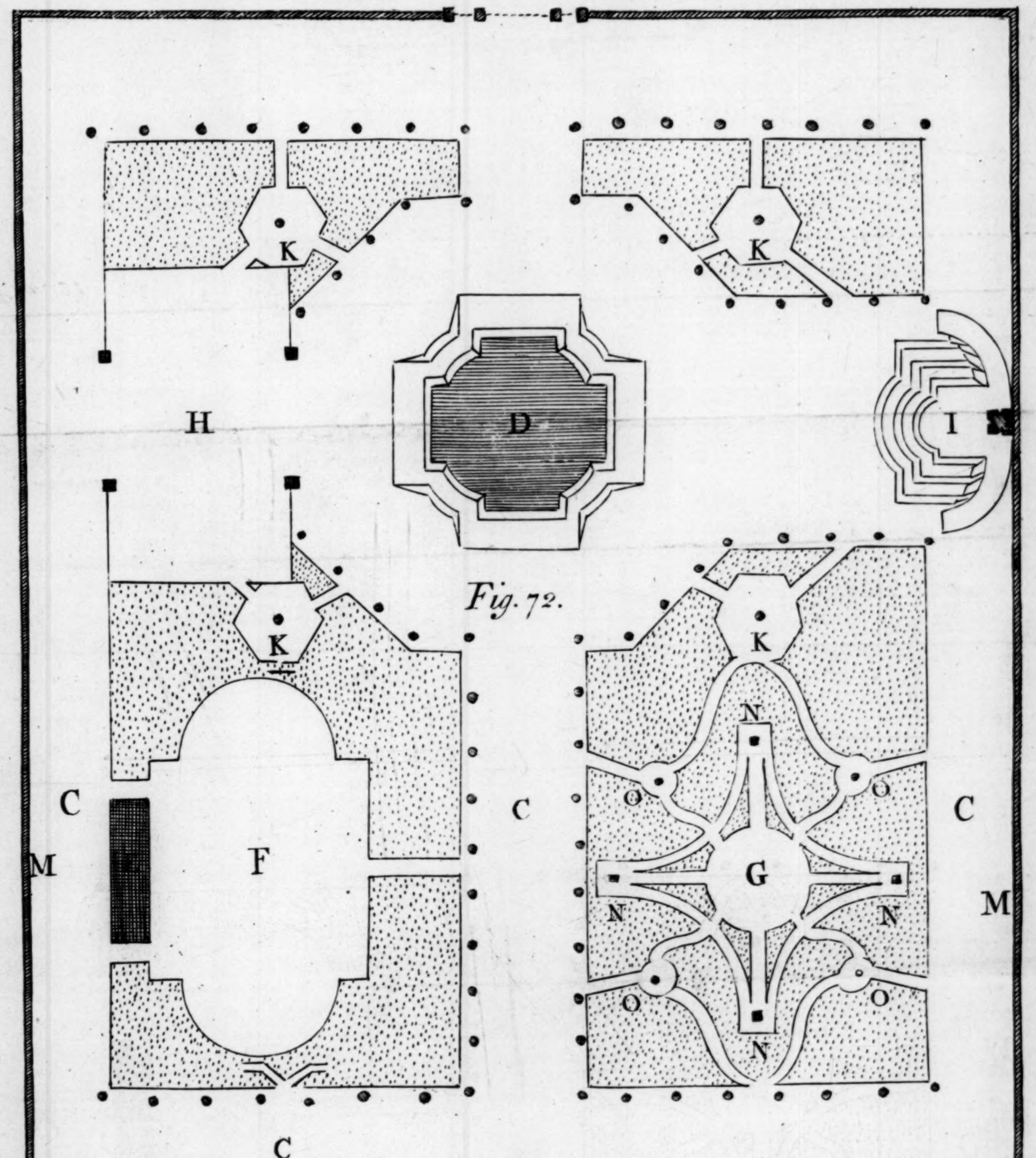
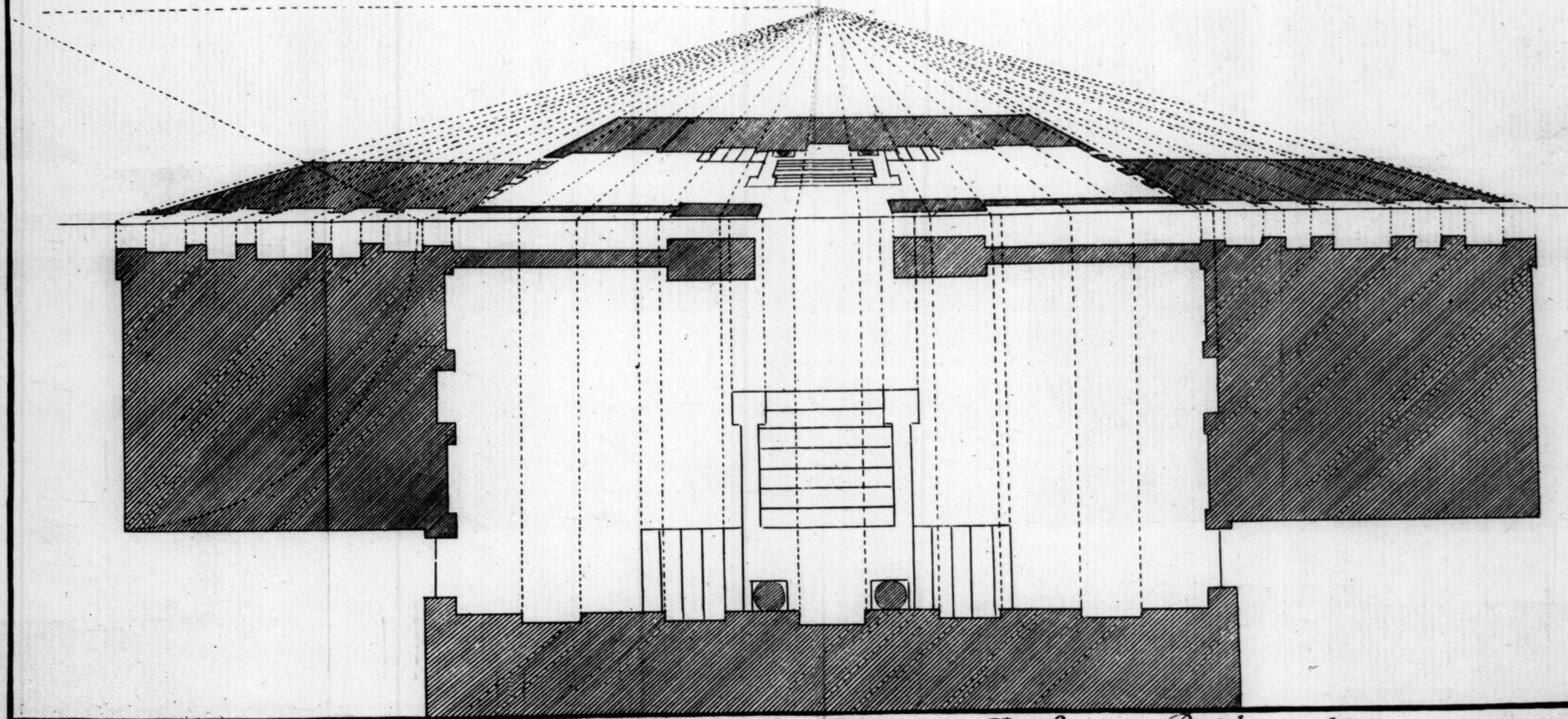


Fig. 72.

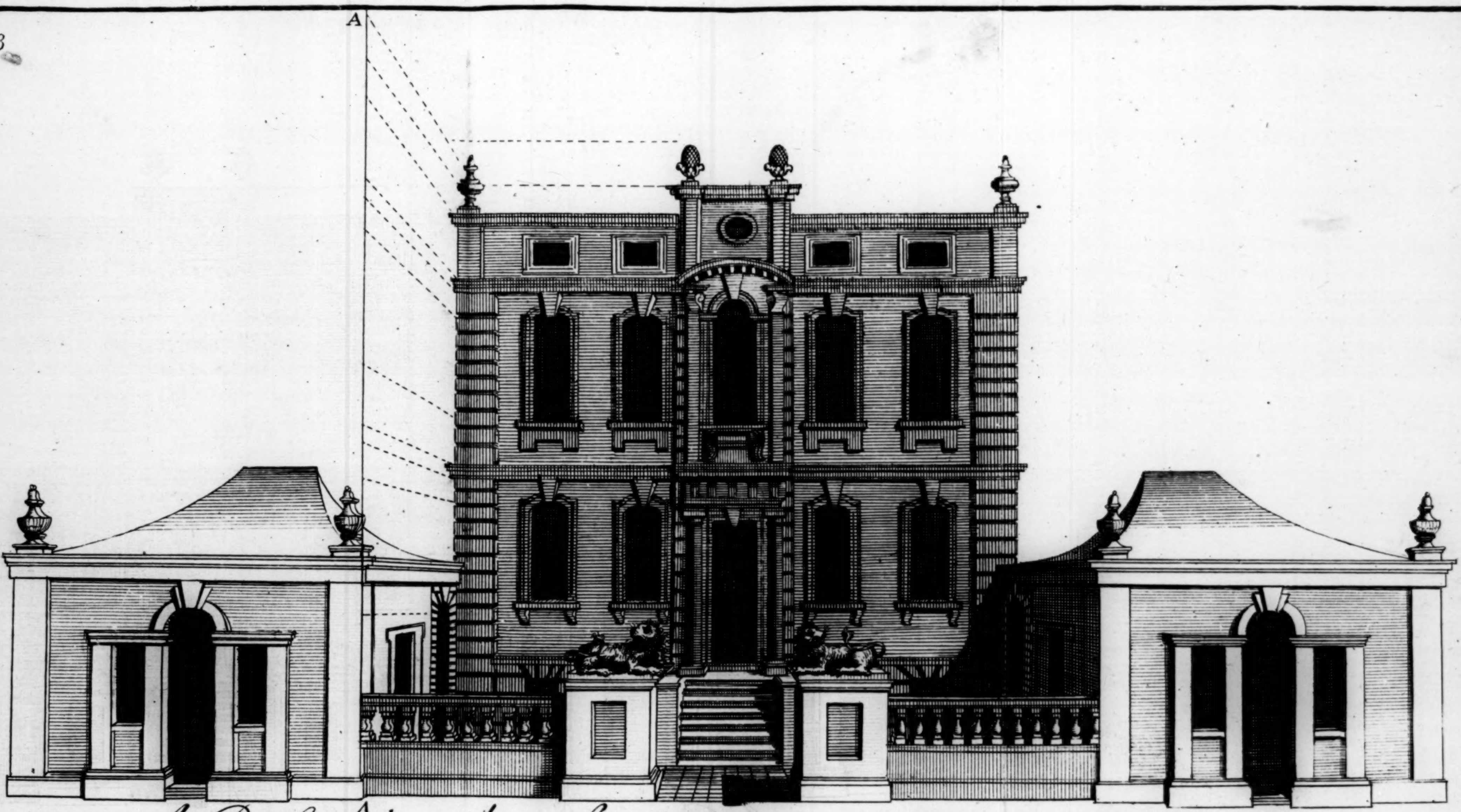
Pla. 22.



The out line of the plan of Mr. Benjamin Holloways House *at Bridgewater.*

W. Halfpenny deline

Pla. 23



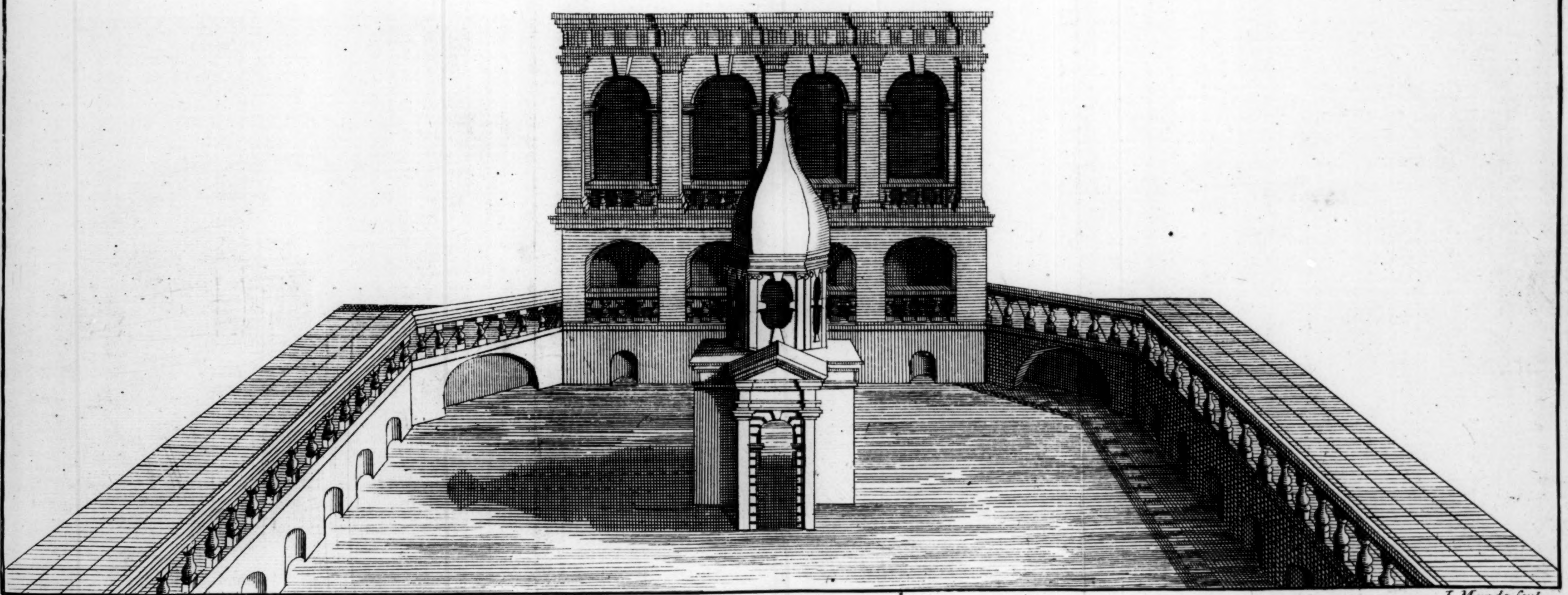
A Perſpective dravght of Mr. Benjamin Holloways Houſe at Bridgewater in Somerſetſhire.

Benja Holloway invent

Will-Halfpenny delin.

The line AA The Geometrical hight of the Houſe with its parts ſet on & Drawn to the point of Sight B.

A Proſpect of ye King's Bath in ye City of Bath.



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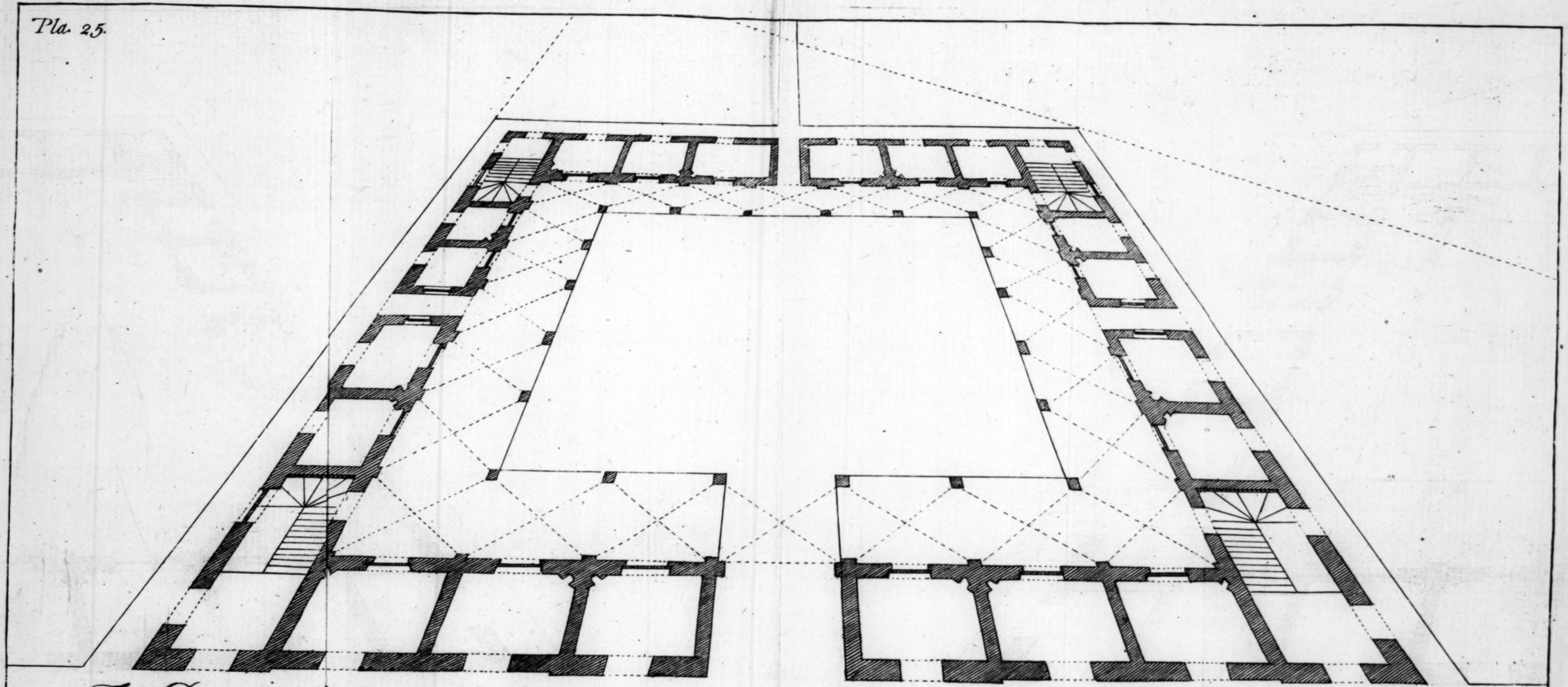
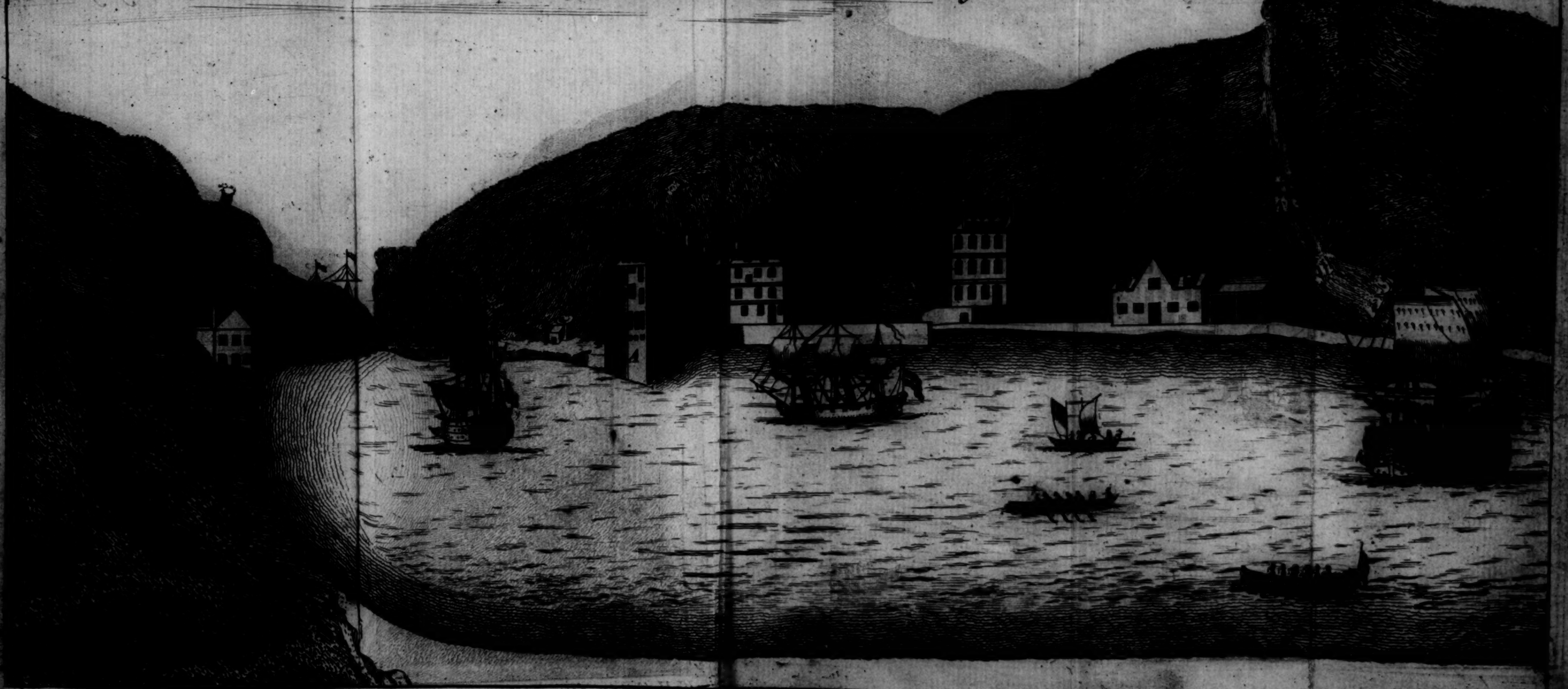


This Draught for the Plan of an Exchange *in the City of* Briſtol, *is humbly Inſcribed to the Induſtrious Merchants and other Trades-men of the City of* Briſtol. *by their Humble Servent*
Wm. Halfpenny

A View of ye Hot Well with St. Vincents Rocks & ye River near ye City of BRISTOL A. The hotwell house



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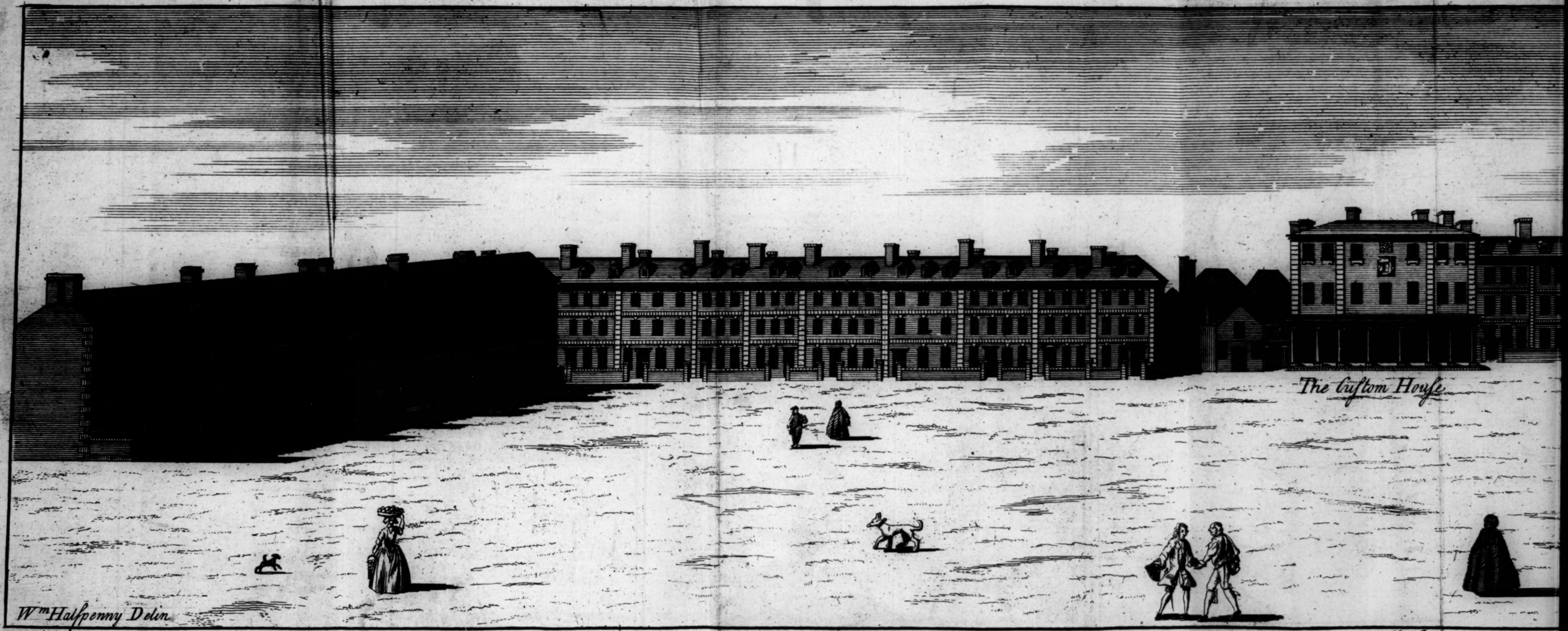
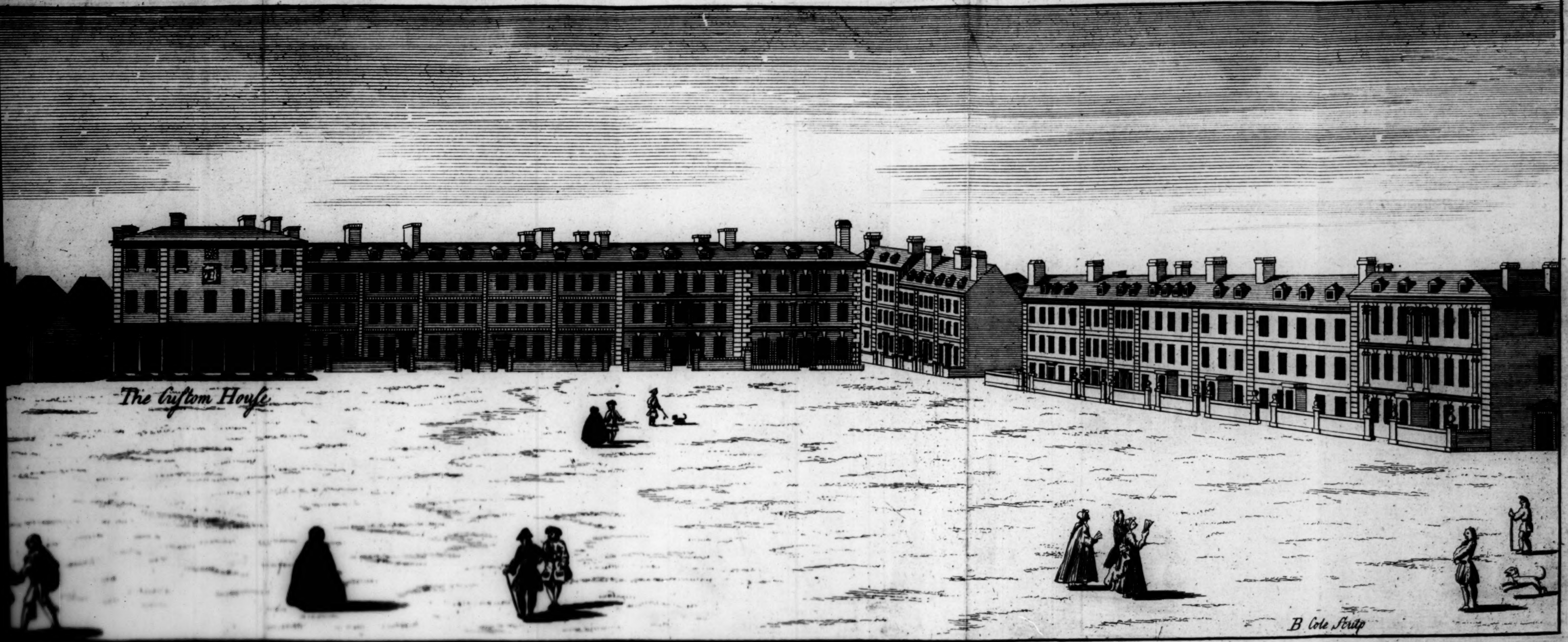
J. Mynde sc.



This Draught of y^{e} North Proſpect of Queen-Square in y^{e} City of Briſtol, is Humbly Inſcrib'd to y^{e} Ingenious M^{r}. Samuel Wo

London Printed and Sold by Iohn Oſwald at y^{e} Roſe and G



Ingenious Mr. Samuel Workman, Teacher of ye Mathematicks in Bristol, by his Humble Servant, Wm. Halfpenny.

London Printed and Sold by John Oswald at ye Roſe and Crown in Little Brittain price 6 pence